Bluebook 8

Question explanations to accompany SAT practice test #8

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Problem 1

Official Answer: B

The clue here is the colon. The text after the colon describes "significant accomplishments" and "long tenure in office". How would you describe a person who held office for a long time and made significant accomplishments? We need to pick an adjective that describes this person and his place in history. Any of the answer choices could be used to describe a person, but only one of them agrees with "significant accomplishments" and "long tenure in office": important.

Problem 2

Official Answer: B

What words would you expect in the blank? "Made from"? If you're in doubt, the second sentence confirms that she used the sweetgrass and palmetto palm as craft materials to form baskets.

Problem 3

Official Answer: C

The first sentence mentions a play written by two people, and the second discusses working alone versus working together. So the main issue seems to be working alone versus working together. You probably have at least a sense of the meaning all four words, in which case you should have no problem picking "collaboration", which means "working together", more or less.

Problem 4

Official Answer: C

In vocabulary questions, colons and semicolons always indicate clues. In this case, the elaboration after the colon describes a widespread influence. "His influence was hardly _____ Spain: his influence was actually widespread." So we need something like "restricted to" or "limited to". You probably recognize most or all of the vocabulary words. If not, you can confine your attention to the prepositions and derive your answer from the fact that only one of the choices contains the word "to".

Problem 5

Official Answer: A

There are two sentences. The blank is in the first, and the clue is in the second. The second describes "simple steps" that people can take to avoid bad things happening. So the bad thing is _____. Avoidable? Solvable? Preventable?

Answers B-D might be appropriate adjectives in a different context. A different paragraph might try to argue that the problem is "undeniable", "common", or "concerning", but none of these would be exemplified by people washing their shoes.

Problem 6

Official Answer: C

"Consumers are willing to pay more and wait longer for a customized product." Critical thinkers should feel discomfort when reading this sentence. It's vastly oversimplified. Would *you* be willing to pay more and wait longer for a customized shirt? Doesn't it depend on your budget, your time, what kind of shirt, and exactly how much more you have to pay and how much longer you have to wait?

Anyway, this is a "structure" question, so pay attention to the sequence of sentences. Think of it like trying to describe the plot of a novel. In a nutshell, the paragraph opens with the topic sentence, then provides examples and benefits in the second and third sentences, then closes with a final sentence giving a difficulty. Do any of the answer choices sound like this?

"Several innovations" seems like too many, and where are the "applications"? We can probably rule out answer A. There was no discussion of any particular company, so answer B is clearly wrong. Answer C is a rough paraphrase of our rough summary above. There's an introduction, some benefits, and a challenge. So answer C is probably correct. What would be the two contrasting techniques? The paragraph only mentioned one, customization, if you can even call that a "technique". So answer D doesn't work.

Problem 7

Official Answer: A

Is it important for college applicants to have a "poetic sense"? Is it important for aspiring intellectuals to be able to interpret metaphors and allegories? Perhaps. But isn't it a bit subjective? Couldn't you ask five different poets to express the same thing and get five very different verses?

This question asks for the "main purpose" of a passage of poetry. You might get "life cycle" from this, or some-

thing about rebirth following night or old age. But none of the answer choices say anything like this. We'll just have to wade through what we are given and try to rule out the wrong choices.

If you try nitpicking the offerings, you might think that answers B through D all seem flawed. The passage doesn't really seem to be about memory, nor about comparing sadness to joy, nor about individuals versus communities. Answer A might not seem like a great answer, either, because the passage isn't clearly about repetitiveness or ongoing cycles, but we can find references to it. (The word "same" occurs twice.) We can interpret "backs bending" and "sad feet" to represent "challenges", and "new roads" and "new sun" could very vaguely represent "rewards". So answer A is the least objectionable of the four choices.

Problem 8

Official Answer: D

What's the "plot" of this passage? It starts by stating a problem. (Well, it's just presented as a fact here, and a rather obvious one at that. We don't see a problem with it until we start discussing navigation later in the passage.) Then it describes a high-tech way of solving the problem. Do any of the answer choices say anything like "it presents a problem and then presents a high-tech way of solving it"?

You can probably rule out answers A-B after reading only a line or two. The passage does not begin by discussing "most navigational tools" or a "celestial-based method of navigation". If you keep reading, you can see that nothing in either of these choices is accurate. Answer C might be a little more tempting. Stating that the NCP "is discernible only at night" might count as "explaining how the NCP is typically located". But it's pretty weak as an "explanation", and the rest of the sentence doesn't hold up. What's the "key difference" that the passage is allegedly "emphasizing"? What's the "alternative way of using the NCP to improve existing instruments"?

Does answer D work? The NCP could count as an "astronomical phenomenon", and being able to see it only at night can count as an "obstacle to observing" it. The rest of the answer checks out, as well. The passage does go on to discuss "a navigational ability of certain animals", and ends by discussing "an optical device". The passage never explicitly states that insects and birds use polarization, but it's a reasonable inference, so saying that the polarization device "mimics the ability" of insects and birds is acceptable. In any case, of the four choices, answer D is by far the most appropriate summary of the passage.

Problem 9

Official Answer: A

What's the main topic of discussion? What is the subject of all but one of the clauses in this passage? A certain cooking book. What is the passage saying about this book? In a nutshell, it was popular and unusual. So the "main idea" should be something like "this book was popular and unusual."

Answers B and D don't say anything about the book, so we can rule them out right away. Answer C focuses on the initial publication and reaction, not the nature of the book nor the ultimate influence. Does answer A work? The word "unconventional" is a good start. The passage never actually said that the book was an important contribution to food literature, but that's a reasonable inference, based on all of the details about the book, words like "most influential project", and the concluding sentence: "Long admired by many, the book [has] shaped contemporary approaches to writing about cuisine." So stating that it was an important contribution seems like a perfectly accurate summary.

Problem 10

Official Answer: C

This is a fact-finding question, and they tell you what fact to find. Scan the passage, looking for anything that Prospero says about Miranda's memories. What is Propsero saying? If we try to summarize it in familiar words, we might say something like this: "How can you remember those women? Maybe if you remember them, you'll also remember how you came to this island?"

Answers A, B, and D don't seem right. Miranda isn't really "reminiscing" about her early childhood, and there's no discussion of how she views her current circumstances. Perhaps she is questioning the accuracy of a recollection, but it is not about "a place other than the island", and there is no discussion of clouded judgement. And what about "impression of a scene" or "a scenario she had daydreamed as a child"?

Her dream-like memory of four or five women can count as an "ability to summon details of an experience", and Prospero's final line suggests that "she may also be able to summon details of her arrival on the island." So C seems like the most appropriate answer.

Problem 11

Official Answer: C

What's the claim that we need to illustrate? That some historians have only seen Lumumba as a symbol or figurehead, and haven't paid attention to his actual deeds. The quote that we pick needs to include some kind of contrast between symbolizing and deeds in reality.

Answer A focuses on how difficult it is to judge him, not any aspects or errors in how he was judged. Answer B mentions "consistency", but doesn't say anything about symbolism versus actual accomplishments. Answer C is a two-part answer with a semicolon, and the parts on each side of the semicolon provide the desired contrast. The part before says that his practical accomplishments were insignificant, and the part after says that what he symbolized is worth attention. If the student wants to claim that historians have glossed over his actions or deeds in reality, and focused instead on his symbolism, this (probably fictional) historian's words would be a good quote to include. Answer D, like answer A, focuses on uncertainties and a lack of knowledge, not on how historians actually judge him.

Problem 12

Official Answer: D

What's the hypothesis that we need to support? That a decline in the population of dusky sharks near the mid-Atlantic coast led to a decline in the population of eastern oysters. Why would this be? Reading further, we find out. Sharks eat rays, and rays eat oysters. So if the sharks go down, the rays go up, and the oysters go down. Now let's wade through the answer choices and see which ones we can rule out.

Answer A brings in extra animals and doesn't help us make any connections between sharks and either of the animals we're interested in. Answer B implies that more rays means *more* oysters, which is the opposite of the relationship that we want to see. Answer C breaks the connection by implying that the sharks didn't have anything to do with anything. We need to see a connection between sharks and oysters.

A critical thinker should have all kinds of questions about the "support" that answer D provides for the stated "hypothesis", but answer D is the only choice that provides the sort of correlation that we need to see. It only gives half of the causal chain, but if we make some assumptions and clarify the question a bit, we can see that we don't need anything else.

Re-interpreting the question, we can assume that measurements of shark and oyster populations have already been established, and the "hypothesis" is that one decline was the cause of the other decline, through an intermediary. Answer D gives the intermediary. If we have already measured the shark and oyster populations and discovered that they both went down, and if we take as known that sharks eat rays and rays eat oysters, then we can guess that the oysters went down because the rays went up due to fewer sharks. *Now*, if we measure the ray population as well, and discover that it changed in the opposite direction to the already-known shark and oyster populations, then this would help establish the causal link between the sharks and oysters. That's this question in a nutshell.

Problem 13

Official Answer: D

Some critic liked the 2019 version, but didn't like the earlier 2016 version. So if we have to imagine this critic stating his evaluation of the two productions, what would he say? That the musical improved a lot? That's what answer D says, more or less.

Answers A and C both say that one version was better than the other, but they have the evaluation backwards. They say that the earlier version was better. Answer B doesn't refer to the earlier production at all. It makes a judgement about "what should have been", and those types of statements are almost never correct on the SAT. They're too subjective.

Problem 14

Official Answer: B

What's the passage about? There is a dispute over dates for some historical settlement. There are artifacts from the 13th century, but there is some vague "other evidence" for the 14th century. If both of these things are correct, then .... what? Nomads were there before the settlement was founded? The settlers brought older existing artifacts with them when they moved in?

Answer B says essentially "older artifacts were brought in from elsewhere", and all of the other choices bring in extra issues. Answer A makes the frequency of artifact recovery an issue, answer C brings in extra people, and answer D makes a completely unwarranted supposition about the artifact recovery process.

Problem 15

Official Answer: D

If you try to narrow your choices based on key words, you might notice that they introduced a new semi-technical term, the biological "honest signal", earlier in the paragraph. You might also notice that one answer choice mentions an "honest signal", and one mentions "dishonest signal". Since the paragraph is set up as a contrast, maybe we should pick the latter?

For a more direct approach, let's try to get the gist of the paragraph and then try to fill in the blank. In a nutshell, this paragraph is about how some male birds use nutrients to create vibrant colors in their feathers, and that these colors attract females. Presumably, the females "know" that the deeper colors mean healthier mates. But there are also a few birds that create the colors in a different way. Discovering these other birds suggests that .... what? Females might think that the males are healthier than they actually are? Do any of the choices say something like this?

A — Wouldn't this be a "dishonest" signal, rather than an "honest" one?

B — There is no discussion in the paragraph of the effectiveness of signaling.

C — This is a complete *non sequitur*.

D — If "honest signal" means an "accurate indication of health", then "dishonest signal" would mean "indicating healthiness that isn't really there", which is pretty much what the other tanagers are doing.

Problem 16

Official Answer: B

All four verb choices could work with the subject "organization" in different contexts, so this is not a subject-verb agreement issue. It's a tense issue. We need to match the tense of the verb to the tense in the rest of the paragraph. The rest of the paragraph is a story about the past, and only answer B is a past-tense verb. You might think that answer A is also past tense, but "has doubled" is technically a "present perfect" tense. It says that something going on in the past has produce a present circumstance. Something was growing in the past, and as of now, it has doubled. The organization was growing in the past, and as of 2000, it had doubled. Answer C is clearly a present tense, and answer D is clearly a future tense.

Problem 17

Official Answer: B

You might notice that two choices are singular (was) and two are plural (were). That should help narrow down the chocies.

What does the pronoun refer to? It refers to two paintings, so it needs to be plural, ruling out the singular choices A and C. The partitive pronoun "some" would be appropriate if we were referring to an unspecified number of paintings, but we know exactly how many paintings there are. There are two. "They" is the only appropriate pronoun to use when referring to two specific paintings.

Problem 18

Official Answer: C

Notice the "profession Individual Name" or "title Proper Noun" pattern. We need to punctuate "researchers Roberto Scandone and Christopher Kilburn". One might be tempted to treat the proper nouns as "parenthetical content" and surround them with commas. But on the SAT, the proper nouns are almost always essential to the sentence and should not be set off by commas. In this case, the names are essential, because we need to identify the individuals who are attesting.

If they had said something like "as *some* researchers can attest", then the names of the individuals would be "optional extra" information, and they would need to be surrounded by commas. But that almost never happens on the SAT. Also, a comma *after* the proper names might be appropriate for some other reason, but in this case it would separate the subject of the clause from its verb, and that should never happen. "Unfortunately, as these researchers, attest, ..." is a flagrant comma fault.

In this case, as in many cases, the correct answer is the one with no commas.

Problem 19

Official Answer: C

The answer choices contain a blend of commas and semicolons, so this must be a "joint" question. Start by ignoring the "however", and place a period after "nickname". "He resisted the nickname" is a valid sentence, but "feeling that it didn't encapsulate stuff" is a sentence fragment. So we have the "Independent Clause, Extra Stuff" or "Main Idea, Followup" pattern, which requires a comma and rules out the semicolons. Semi-

colons need to have two independent clauses, one on each side.

Now have to deal with the "however". "However", "on the other hand", "similarly", and other such conjunctive adverbs are always "optional extra" stuff for punctuation purposes, and they always need to be set off from the rest of the sentence with commas. If you ever see "however" on the SAT, it should always have commas around it. Therefore, (notice the comma?) we need a pair of commas, one on each side of "however".

Problem 20

Official Answer: A

This is a "joint" question. We have a mix of commas and colons, and a blank in the middle of the sentence. If we place a period after "while", we see that the stuff before the blank can stand on its own as a valid sentence. If we don't include the "while", then the stuff after the blank could also stand on its own as an independent sentence. This makes B erroneous, because you can't link two independent clauses with a mere comma. (That's technically known as a "comma splice".) Answer A works perfectly well, however. The two rules for colons are that the stuff before the colon must be an independent clause, and that it must introduce or set the context in some way for the stuff after the colon. Answer A passes both of these tests.

Adding the subordinating conjunction "while" just messes up the sentence even further. It would work if we could split the mess into two separate sentences: "The number of jams varied: while some shoppers had 24 options, others only had six." But for this to work, not only do we still need the colon, we would have to add the verb "had". We can't have a floating dependent clause, so we would need to add the verb to create a main clause for the dependent clause to attach to.

Problem 21

Official Answer: B

Start by looking for the independent clauses. There are two, one on each side of the blank: "Gitlin's use of a term referenced other stuff" and "even shows that varied attracted audiences" are both independent clauses. This requires a "strong" joint, something more than a mere comma, and our only "strong" option is the semicolon in answer B.

Problem 22

Official Answer: C

How are the two sentences related? The first sentence discusses gold prospectors and the difficulties they faced, and the second describes the consequences of these difficulties. So "consequently" is a perfectly natural transition.

A quick glance at the dates might make you think that "next" is appropriate, but this isn't a list or a sequence. It's an antecedent and a consequent. "Furthermore" would be appropriate if the second sentence were adding additional support to an argument, which isn't happening here, and the two sentences definitely do not clash or contrast with each other, so "still" is not appropriate.

Problem 23

Official Answer: B

How are the sentences related? "Regardless" and "however" are both contrasting words, and the sentences do not contrast with each other, so we can rule out A and C. The final sentence obviously does not happen earlier than the others, so "earlier" is complete nonsense. This leaves only "specifically", which does work, because the final sentence can be assumed to be a more precise identification of the extreme influence mentioned in the previous sentence.

Problem 24

Official Answer: A

What's the goal? To emphasize the order in which Alaska and Hawaii became states. Only one answer choice names both states. If you want further confirmation that A is the correct answer, you can find it in the bullet points. Answer A repeats the chronological information given in the first two bullet points.

Problem 25

Official Answer: D

What's the goal? To contrast the emissivity of metal and silicon carbide fibers. Searching the bullet points for this information, we find it in the third and fourth bullet points. Metal fibers have an emissivity of 0.02 and silicon carbide fibers have an emissivity of 0.74. Only one answer choice contains these numbers.

Answer A includes the word "emissivity" and mentions both of the fibers, but it doesn't tell us with the emissivity of either fiber actually was. Answer C also includes

"emissivity" and says that the two fibers had different rates, but that's not a very good contrast. It isn't even the main clause of the sentence. Answer B doesn't mention anything — not "emissivity" nor either of the two fibers.

Problem 26

Official Answer: D

What's the goal? To emphasize the role a misconception played in the naming of a place. You might notice that answer A has nothing to do with the process of naming a place, so that one can be ruled out right away. If you want to continue through the other answer choices to see if any others are as easy to rule out, you'll see that all three of them have to do with naming a place, but only one really involves any kind of misconception. Answer D doesn't explicitly say that the explorers *mistakenly* called the peninsula an island, but it does say that it was thought to be an island, and it does say that it was really a peninsula. So there's the misconception.

If, instead of jumping to the answer choices, you had jumped to the bullet points to search for the misconception, you could have found it in the last three bullet points. The third and fifth both include the word "island" in quotes, so that's a pretty big clue. The last bullet point tells us that this "island" was actually a peninsula, and the fourth bullet point tells us that this place was named after an island. Only answer D includes both of the words "peninsula" and "island". (One could argue about whether answer D really qualifies as *emphasizing* the role of the misconception, but none of the other answer choices are even close.)

Problem 27

Official Answer: C

What's the goal? To emphasize the "aim" of the research study. Focus on the aim. If the answer choice mentions any conclusions or says anything about the methodology, you can rule it out. What was the aim of the research study? To determine if some of the Moon's oxygen is coming from the Earth instead of from the Sun. Answer A doesn't mention oxygen at all, and answer D focuses on the conclusion of the research study, not the aim.

That leaves B and C, both of which mention the relevant mystery. Which one is better? Which choice does a better job of "emphasizing" the aim of the research study? Answer B doesn't mention the research study at all. It just states that someone was curious about something. Answer C states that he actually did something about it. Answer C doesn't mention the research study either, but at least it mentions that Terada was a professional scientist, and it says that he did more than just wonder. This gives answer C the edge over answer B.

Problem 1

Official Answer: C

This one's pretty easy. The first two choices don't make any sense at all, and the last choice would only make sense if the animals could talk.

The first sentence mentions wide differences, and the second give three examples of animals feeding their young. These are differences in how the animals "provide" food for their young.

Problem 2

Official Answer: D

Colons in vocabulary questions are always clues. In this case, the clause after the colon tells us that wave power is unpredictable and problematic. So it isn't ... reliable? We need an antonym for "unpredictable". "Consistent" is the most appropriate appropriate antonym for "unpredictable" or for something that "varies".

You might be tempted by "confident" after a hasty reading, thinking that the unreliability of wave power would lead to a lack of confidence, but the adjective needs to describe wave power, not people. Wave power can't be confident.

Problem 3

Official Answer: B

You probably have at least a vague sense of what these words mean. Even if you don't know "skeptical", you've probably heard of a "skeptic". If you have trouble with this question, it is probably with figuring out which word belongs in the blank.

In this case, we are looking for an adjective that describes this painter's behavior. Looking elsewhere in the passage, we find our clue: "...he paid close attention..." Which word describes someone who pays close attention? Not skeptical, nor critical, nor confident. Only "observant".

Problem 4

Official Answer: A

What word would you expect in the blank? If the historians ended up dismissing the letters as a hoax, then they must not have been able to *verify* the authenticity? *Confirm* the authenticity? The only word that is similar to "verify" is "validate".

Problem 5

Official Answer: A

This is a "big picture" or "main idea" question. Try describing in familiar words what the paragraph is mainly about. In a nutshell, you might say that this paragraph is about the invention of the reCAPTCHA test. And that's exactly what answer choice A says.

Before rushing on to the next problem, it might be a good idea just to scan quickly through the other choices, just to make sure that there is nothing you missed. (The SAT likes to be sneaky sometimes.) The paragraph did mention digital scanners, but only in passing, and there was no discussion of how they work, so we can rule out B. The passage also mentions von Ahn's book-digitizing project, but only as context for later developments. Would you say that calling attention to this project was the main purpose of the paragraph? Probably not, so we can rule out C. And there was absolutely no mention of how popular the test was (or wasn't). So D doesn't work, either, confirming that A is the correct answer.

Problem 6

Official Answer: C

It's hard to appraise the function of a sentence when it is only one of two, they are both brief, and they couldn't even include the real subject of the sentence. They had to supply it within editor's brackets. Let's jump to the answer choices and see if we can rule any out for being flagrantly wrong.

Does the sentence list topics of discussion? Not even close. Does it suggest that he dislikes meeting people? No. Does it contrast the uncle with the father? Yes. Does it describe a conversation? It might in a different context, but the second sentence makes clear this is not a description of a conversation, and it definitely is not between the narrator and the narrator's father. So there's only one acceptable answer.

Problem 7

Official Answer: A

Text 1 describes a tiny skull that might be from a bird. Text 2 describes a second, more complete fossil, and it concludes that they were from lizards, not birds. Text 2 corrects an initial impression with additional evidence.

Answer A acknowledges the similarity to birds and the reason for the initial impression, and then states the more recent, presumably correct conclusion. Answer A

is a perfectly reasonable imaginary quote from the the second author.

Answer B is incorrect. It *is* clear what caused the initial impression: a round skull with an apparent beak and large eye sockets.

Answer C has it backwards. The researchers initially thought that the fossil might be of a bird, not a lizard.

Answer D starts out ok but then starts rambling and making things up. Don't pay too much attention to answers that sound like gibberish, especially when you already have a better answer to choose.

Problem 8

Official Answer: B

This is a "fact-finding" question, but they don't tell us to look for any particular fact. Just read the passage, then check the answer choices, going back to check the passage if necessary.

There is really only one answer choice that makes sense here. There is no discussion of Hallward's opinion, of other types of paintings, or of Hallward's talent, but there is mention of the "pleasure" and "joy" that Dorian feels while looking at the picture. If you feel "pleasure" and "joy", you could probably also be described as being "delighted".

Problem 9

Official Answer: D

This is exactly like the last question. It's a fact-finding question, but they don't tell you to look for any particular fact.

If you quickly skim the passage, you may remember enough of the details to be able to pick the correct answer. Another strategy might be to jump to the answer choices, pick out the details one at a time, and then scan the passage for that specific detail. Use whichever strategy works best for you.

If you find yourself hesitating between two or more answer choices, that is the time to start nitpicking, paying close attention to all of the words. There is a very vague allusion in the word "counteract" to a clash between Elinor and her mother, so A and C might look ok on a casual reading, but look more closely. There is no basis to claim that Elinor actually *argues* with her mother, let alone "often". There is also no indication what Elinor thinks of her mother. So we can rule out A and C. Can Elinor be overly sensitive with regard to family matters? The paragraph is entirely about Elinor's virtues and her maturity. It never says that she is too sensitive about anything.

And why is there a dash after a semicolon? That arrangement will never be correct in an SAT punctuation question.

Problem 10

Official Answer: A

This is a "fact-finding" question, and they tell you which fact they want you to find, so this shouldn't be too difficult. Just scan the passage, looking for anything worrisome about Pando.

The second sentence says explicitly that "ecologists are worried", so the answer will probably contain "its growth is declining in part because of grazing by animals". Well, no, that would be too easy. We'll have to find the answer that is closest to this. You can probably rule out C and D, but you might hesitate between A and B. Start nitpicking. Answer A doesn't say that it is growing more *slowly*, it just says that the rate isn't the same, but at least it refers to growth. Answer B could be *interpreted* to mean that it isn't growing as fast, or that it won't be in the future if this trend keeps up, but it doesn't explicitly mention growth. If the trees stopped reproducing, that would definitely have implications for the growth of the colony, but it's not exactly the same issue. In real life, you'd want to ask someone for clarification, but on the SAT, if you are torn between two answers and one includes an important word and the other doesn't, go with the former.

Problem 11

Official Answer: B

All four answer choices refer to a different row in the table ... except for A and C, which aren't even within the range of years presented in the table. The only number mentioned in the paragraph is 14.22, which corresponds to the last row and the years 1995-1999, so answer B is probably correct.

To be more thorough, notice that the table presents the percentage of video games still available in various years, and the sentence containing the blank says that only 14.22 percent of games are still available from the years _____. Consulting the table, we see that 14.22 percent of games from the years 1995-1999 are still available, and 1995-1999 is answer B.

Problem 12

Official Answer: C

Like the last question, this is is simply a matter of reading data from a table. "Based on the information in the table, at what depth does the southern stoplight loosejaw live." We find "southern stoplight loosejaw" in the second row in the table next to the numbers "500-2,000 meters", so C must be the correct answer.

Problem 13

Official Answer: A

What's the "claim" that we need to illustrate? Alexandra Bergson has a "deep emotional connection to her natural surroundings." Or to put it more crudely: She likes being outdoors. So the best quote should show that Alexandra likes or responds emotionally to outdoor stuff.

A — This one is a definite possibility. The country means a lot to her. Chirping is sweet music. Her heart is with the quail and the plover. This does seem to convey an appreciation for nature.

B — She talks, she spends time with a farmer, she learns a lot. You might think that this passage shows her *being* outdoors, but does this passage show any emotion?

C — She drives. The rest of the words paint a picture of her trip. Again, she is outdoors, but does this passage give any indication of her emotional state?

D — This paints a picture of Alexandra as being very adept at agricultural markets, but does it tell us anything about how she feels about nature?

Problem 14

Official Answer: C

We want a tree that is native to North America, so after running our eye down the last column, we see that we can ignore the bottom two rows of the table. We also want a tree that won't exceed 60 feet, and a glance down the middle column limits our choices to only one: the red maple.

Problem 15

Official Answer: D

This is clearly a verb question, and the subject is obvious. It's "Paik". However, if you try matching this subject to the four verbs, you see they can all work, grammatically at least. When this happens, look at the rest of the passage, and make sure the tense is consistent with the context of the story. In this case, the previous sentence is in the past tense, but the sentence in question begins with "Today..." So we need the present tense in this sentence, ruling out everything but answer D.

Problem 16

Official Answer: D

Boil down the sentence: "Margarita Engle uses poetry _____ the story." The correct answer will probably be obvious. You might also notice that among the four answer choices, there are three true verbs and one infinitive (the one with the "to" in front of it), which should make you suspect that the infinitive is the correct answer.

Problem 17

Official Answer: A

Verbs again. Try pairing the four choices with "it" or "they".

It allows...
They are allowing...
They have allowed...
They allow...

There are three plural verbs and one singular, which should make you suspect that the correct answer is the singular verb. To confirm, look for the thing or things doing the action, i.e. the subject that needs to be paired with the verb. What is doing the "allowing"? In this case, it's a gerund, i.e. an action. It's the action of *landing*. If you try pairing that subject with the four choices, you have this list:

Landing allows...
Landing are allowing...
Landing have allowed...
Landing allow...

The correct choice is often obvious when you boil down the sentence.

Problem 18

Official Answer: C

Frequently on the SAT, you'll see three "verbals" (verb-like words that end in "-ing" or have "to" in front of them) and one "true verb", or vice versa, and the odd man out is virtually always correct. In this problem,

however, we have two of each. If you recognize that the sentence consists of an independent clause, then a comma, and then the blank, you might realize that the stuff after the comma has to be extra descriptive stuff. A comma cannot join two independent clauses, so the words after the comma cannon be an independent clause, and you can rule out the two true verbs. That leaves B and C. At this point, you might think that answer C just "sounds better" than answer B. Officially, a participle is more appropriate than an infinitive at this point.

You could also try boiling down the sentence. It's a little trickier here than with other verb questions, because the blank come after the main idea. The main idea is "Food may become unavailable", and the rest is supplementary stuff. But if you are skilled at throwing away extraneous stuff and keeping only the essential pieces of a sentence, you may come up with this list of options:

> Food may become unavailable, forces the monkeys to hunt.
> Food may become unavailable, to force the monkeys to hunt.
> Food may become unavailable, forcing the monkeys to hunt.
> Food may become unavailable, forced the monkeys to hunt.

If you can strip down your sentences like this, the correct answer should be obvious.

For a problem that is classified as "easy", this one sure has a lot of issues.

Problem 19

Official Answer: B

We are given a long string of words with a blank in the middle. You might recognize that among the four choices, one of them is an appropriate way to join two independent clauses (the comma plus conjunction) and three are not (the three "weaker" joints). To confirm that the odd one out is correct, start by finding out if the stuff before and the stuff after the blank are independent clauses or not. It might be a little hard to tell, since they are both long. "The Alvarez theory maintained something" and "it left the question unexplored" can both stand on their own and are valid independent clauses. This means that the versatile but feeble comma is not strong enough to hold them together ... unless you strengthen it with a conjunction. You can link two independent clauses together with a comma and a coordinating conjunction, but not either one alone. (A comma without a conjunction is technically known as a "comma splice", and a conjunction joining two independent clauses without a comma is as a run-on sentence.)

Problem 20

Official Answer: A

The answer choices are all verbs, to be matched with the subject "Kay Zufall", but all of them could be grammatically correct depending on the context. This is not a subject-verb agreement issue. So we need to look around at the context to decide which tense is appropriate. The rest of the passage recounts events in the past, which rules out B, but still leaves the other three. In this case, we need the simple past tense "suggested", the same form as the previous verb "advised", rather than the past perfect or past progressive tense. "She *advised* him to change the product. In addition, she *suggested* selling the product."

Problem 21

Official Answer: D

This one is classified as "hard", but if you recognize that there are two independent clauses in this sentence, you can just pick the only "strong" joint. "These consonants are rare" and "four of them are common" can both stand on their own and form valid independent clauses. Among the offerings, the only appropriate way to join two independent clauses is the semicolon. A comma strengthened by a conjunction would work, and we are offered a comma, and a conjunction, but separately, not together. The comma without the conjunction is technically known as a "comma splice" and the conjunction without the comma is a "run-on sentence". To mash two long independent clauses together without any of these things is just bad writing, even informally.

Problem 22

Official Answer: D

If you notice that one sentence begins with "First" and another begins with "Third", it should be obvious that the sentence in between needs to begin with "Second".

Problem 23

Official Answer: D

How are the sentences related? The first sentence mentions the Twentieth Amendment, and the next two mention specific aspects of the amendment. The third sentence gives an additional aspect to add to the second sentence, so "in addition" is an appropriate transition between them.

The third sentence does not provide a contrast to the second, which would make "instead" appropriate, and it does not give a concrete example or specification of the second, which would make "for instance" or "specifically" appropriate.

Problem 24

Official Answer: C

How are the two sentences related? The first sentence mentions wolves, and the second sentence says that dogs are different. We have a contrast, so "however," "on the other hand," or "by contrast" (i.e. answer C) work perfectly here. We do not have a restatement of something, we do not have a generalization and then an example, and we do not have a cause and consequence.

Problem 25

Official Answer: B

How are the sentences related? They both present arguments for not televising the proceedings in the Supreme Court. The second one adds to the first, making "additionally" an appropriate relational word. The two sentences do not contrast or conflict with each other, which would make "however" appropriate, and the second does not give a specific example of a broader claim presented in the first, which would make "for example" appropriate. You might wonder if "in comparison" could work, but the goal is not to find similarities and differences. The goal is to provide additional support for a certain position on a certain issue.

Problem 26

Official Answer: C

How are the sentences related? The first describes a hostile environment, "seemingly inhospitable to life". The second describes life in this environment. That's a contrast, requiring a contrasting word to relate them. "Still" might not be the most natural word to use in this context, but it's the only contrasting word we are offered. The second sentence is not a consequence, a specification, or a restatement of the first, so none of the other choices are appropriate.

Problem 27

Official Answer: B

What's the goal? To explain an advantage of the infilling technique. If you jump to the answer choices, you might find that only one of them mentions an advantage or a positive thing of any kind. If you jump to the bullet points to figure out what "infilling" means and to search for the advantage, you can find these things in the last two bullet points. The advantage is that it is "minimally invasive", and only one answer includes the word "invasive".

Problem 1

Official Answer: D

We need an adjective to describe the web of relations. Can you find a description of this web elsewhere? Look after the semicolon. They provide a description of how three things are all interrelated. Which word is the best description of this tangled web?

If you know the meaning of "intricate", you probably realize that this is the best adjective. If not, you might just have to guess. If the web were indecipherable or obscure, then the author wouldn't have been able to provide the detailed description after the colon. Some people might grow maize, squash, or beans as ornamentals, but that's not the issue here.

By the way, did you notice the use of semicolons to separate items in a list? Remember that pattern, because it sometimes comes up in the punctuation questions.

Problem 2

Official Answer: B

Look on the other side of the colon for your clues. If critics are praising something, would they use the adjectives "inexplicable" or "mystifying"? Maybe in a different context, but not here. "Restrained" doesn't really seem appropriate for a "dynamic" exhibit involving an 84-foot curtain, but "inventive" does.

Problem 3

Official Answer: B

You might a little trouble with the words in this one. You probably know "unoriginal" and maybe "disorienting", so let's start with those two. Do they work?

We are looking for an adjective to describe the author's claim. Reading the rest of the passage to help us figure out how to describe the claim, we find that it "fails" to do something, and it is apparently not convincing, because it doesn't address recent discoveries. What's a good antonym for "convincing"?

You can probably rule out "unoriginal". The originality is not in question. You might be tempted by "disorienting", feeling that a flawed or confusing argument could disorient you. But "disorienting" is not really the opposite of "convincing", and a failure to account for something wouldn't necessarily make an argument disorienting. If you know what "nuanced" means, or even if you just know that it's usually a positive thing, you can rule out that answer. If you don't know what "tenuous" means, but you've ruled out the others, then it must be "tenuous". If you are hesitating over more than one answer choice, you may just have to pick the one that feels the best.

"Tenuous" derives from the same root word as "tense", "tension", and "tendon". It means stretched out or drawn thin. When applied to an idea or an argument, it means thin or insubstantial, and it's a good adjective to describe an insufficient argument.

Problem 4

Official Answer: A

This is another vocabulary question in which the words themselves might be a problem. You probably know what "foretell" means, and maybe "proclaim", but you may have difficulty with "repudiate" and "recant".

The main clue is "this rejection...", which indicates that whatever they just described was some kind of rejection. So we are looking for a word similar to "rejects" to describe what Harjo does to television's tendency. You can probably rule out "proclaim" and "foretell", since neither one seems like a rejection. Similar prefixes can often be a helpful clue, but that doesn't help us distinguish between the two remaining choices in this case, because both "repudiate" and "recant" start with "re". If you can boil it down to two words, but you have no idea what either of them mean and you've run out of clues, then you'll just have to guess. But at least you've improved your odds to 50-50.

"Repudiate" and "recant" have similar meanings, but you do them to different things. You "repudiate" something else, and you "recant" something that you yourself have said. When you repudiate something, you refuse to accept it or to be associated with it. When you recant something, you retract or take back something that you said earlier. Perhaps you are a fan of courtroom dramas and you've heard of someone recanting their testimony. They said one thing earlier, but now they say that they were lying before and they say something else now. Harjo wouldn't recant something that television did, so "repudiate" is the best answer here.

Problem 5

Official Answer: D

With "underlined sentence questions", the best strategy may be no strategy. Just skim the passage, trying to get a rough "big picture" in your mind, then ask what part

the sentence is playing in that picture. Then nitpick the answer choices.

In this case, B and C are pretty easy to rule out. The sentence in question has nothing to do with the residents of John's town and it does not discuss John's imagination or any other children. It's all about John himself and what he likes to do. Does the sentence provide an extended description of a location? It does mention the "water's edge" and "dry twigs" sailing away downstream, and it is pretty clear that John likes to visit this place, but does the sentence really count as a description of a location?

Does the sentence suggest that John longs to experience a larger life elsewhere? It does say that he watches things "sail away" and he "wanted to follow them" to "the wide world". The sentence is largely a description of John doing things, but it's doing a pretty good job of telling us about his desires. He's dreaming, as children often do, of far away places.

Problem 6

Official Answer: C

Text 1 attempts to refute claims that mergers lower prices. (Though it's based on a "model", and a critical thinker might wonder how you "model" an economic merger of specific newspapers in a specific city, and how valid the results of such a model are.) Text 2 focuses on a different industry in a different country, and long term effects instead of short term effects, and reaches a different conclusion.

If we were to imagine the authors of Text 2 stating an opinion about Text 1, what would that opinion look like? "You looked at the wrong industry and the wrong time scale"?

Answer A seems like it might be on the right track, but it's too narrow. Why change the city and not the industry or the time scale? Answer B supports a conclusion of increasing prices in the long term, not decreasing prices. Answer C advocates paying attention to the long term instead of merely the short term, which does seem consistent with Text 2. Answer D puts words in the authors' mouths. There is no indication that the authors view the newspaper industry as unique in any way.

So B and D are pretty clearly wrong, and C is a better answer than A.

Problem 7

Official Answer: D

This one's a "fact-finding" problem. Go back and read the passage, looking for Lord Chancellor's response to the crowd. You'll find it in the last paragraph. Now check the four answer choices.

A — This one looks good if you only read the first half of the sentence. He does ask about the meaning of the crowd's shouting, but does he actually claim to know what the crowd wants?

B — Does he ever indicate a desire to speak to the crowd? Did the crowd ever actually roar for the Sub-Warden?

C — Does he ever express sympathy for the crowd's demands? Does he express annoyance at the crowd's shouting? Confusion, maybe, but not annoyance.

D — Does he describe the crowd as being united? Yes, he does. ("And with such unanimity!") Does the crowd appear otherwise? Yes again. (Check the first paragraph.)

Problem 8

Official Answer: A

What's the claim? That being more informed makes you more likely to vote. Can you find any patterns in the graph that support this claim? The graph gives two kinds of bars, gray and black, for low and high information voters. (You might wonder how in the world they classified people into these two categories, but you obviously don't want to dwell on such things during a timed test.) You'll also notice that the black bars, the ones for high information voters, are all higher than their corresponding gray bars. This is perhaps the most striking feature of the graph, it is pretty clear support for the claim (since the height represents likelihood of voting), so the correct answer choice will probably mention this fact. You don't even need to read the passage (other than to find the claim). Just go to the answer choices and find which one mentions that the black bars are all higher than the gray bars. It's in answer A.

The other interesting thing that you might notice from the graph is the fact that both kinds of bars are higher at the ends than in the middle. The black bars are a little lower in the middle, and the gray bars are a lot lower in the middle. This makes perfect sense, since those who have strong opinions are more likely to vote than those without strong opinions. And answer C accurately points out this trend. But the claim has to do with how much information you have, not with how strong your

opinions are, so this observation doesn't help support the claim.

You might also want to run your eye over the rest of the answer choices, just to confirm that there isn't a better choice. Answer D isn't true. Or at least you can't tell from the graph. Answers B and C are true, but do they support the claim?

Problem 9

Official Answer: C

This question includes a table of data, and you can sometimes rule out answer choices without reading the paragraph simply by checking them against the table for factual inaccuracies. In this case, we can rule out A. To distinguish among the others, we'll have to dig deeper. But maybe not much.

What's the suggestion that we need to support? We find it near the end of the paragraph. "An estimate of dinosaur bite force may be significantly influenced by the methodology used in generating that estimate." Or in other words, how you measure can make a difference. Glance at the table, and see what you can see. It lists four different studies, using three different methods. What do you notice? The estimates are all over the place. Assuming they were all considering similar-sized animals with similar-sized jaws, then the wide diversity of estimates seems to clearly indicate that the method of estimating makes a big difference.

Well, almost. It's conceivable that bite force of dinosaurs is something that is just plain difficult to measure accurately. Maybe everybody's results are always going to be erratic. But you might also notice that the first and last rows in the table are the two that used the same method, and they both gave pretty similar ranges. Four rows in a table is far from conclusive evidence, but it does seem that if you use the same method, you get the same result, and if you use a different method, you use a different result. It does seem that the method is what makes the difference.

Answer C points out that similar methods give similar results, and different methods give different results, so this does the best job of supporting the idea that estimation method controls the results that you get.

Answer B only mentions one study and one method. Answer D only points out the two similar studies, and it quibbles about the fact that the two estimates weren't exactly identical. It says nothing about other methods.

Problem 10

Official Answer: C

What's the hypothesis? In a nutshell, we could say that "damage to the plants' roots makes them healthier." The answer choices all involve otters, so maybe we should make this a little less vague: "When otters damage the roots, it makes the plants healthier." We need to *undermine* this idea, so we should probably look for an answer that includes otters, but unhealthy grass.

Let's check the four answers. Do they undermine the idea that otters make plants healthier by damaging them?

A — This doesn't help. We need lots of otters alongside healthy grass.

B — Again, we need otters plus grass.

C — This is a fancy way of saying that as otters go up, plants go down, presumably because the otters are damaging the plants. So this does undermine the idea that otters make the plants healthier.

D — Are we interested in plants other than eelgrass?

Problem 11

Official Answer: D

What's the argument that we need to support? That Mexican American folklore is more the result of recent North American influence than historical Spanish influences.

A — This strengthens the Spanish connection. We need to weaken the Spanish connection and strengthen the North American connection.

B — This strengthens the connections from region to region and supports uniformity. One could argue that homogenization could constitute support for ongoing local interactions. As the cultures mingle, their folklore becomes blended and shares more common elements. But this doesn't seem like very direct or strong support, and there's probably a better answer. (The official "explanation" for why answer B is incorrect states that mere similarities wouldn't shed any light on where the folklore originated. But the argument wasn't about the ultimate origin. The argument was simply that the contemporary folklore "is mainly the product of ongoing interactions of various cultures in Mexico and the United States." The only sensible way to read this is that, wherever the folklore came from *originally*, the way it is now is the result of blending and evolution *since then*. The explanation-writer seems to think that the issue is crudely "it came from Spain" versus "it came

from America". The official "explanation" also says that ongoing interactions should produce *more* variability, not less, "as different cultures have interacted in different places". The reasoning is very hard to follow, if you can even call it reasoning.)

C — You could also make a case that this supports the argument, albeit a weak one. If the folklore was previously unknown, you might imagine this explanation: it didn't exist before. In other words, it's modern. And that would certainly strengthen the idea that the folklore has a modern origin, or at least that it continues to evolve under modern influences. But again, this doesn't really hit the nail on the head, and there's probably a better answer.

D — There are a lot of words here, but the phrase "clearly recent origin" is what we need. This strengthens the argument for recent influences over historical Spanish influences.

Problem 12

Official Answer: C

What's striking about the graph? It's a graph of survival rate versus time (which makes one wonder why they included 110 on the vertical axis), and it shows type A flies mostly surviving and type AB and B flies completely dying off. So type A flies must have some kind of resistance or immunity that the other flies don't have.

Searching the paragraph to figure out the difference between the flies, we see that the difference lies in the genes. Be careful not to overlook the word *silencing*, which we can take to mean "shut off" or "rendered ineffective". Type A flies have the A gene silenced, type B flies have the B gene silenced, and type AB flies have both genes silenced. So what do type A flies have that neither of the others have? They have the B gene. So apparently, the B gene is the immunity factor.

Answer B goes beyond simply stating that gene B is the protective factor into stating that it may actually have developed for that purposed. But if you've read the rest of the paragraph, you'll see that that makes sense. The purpose of the study was to investigate the evolution of these genes. The SAT writers have also muddled the issue by discussing two bacteria species. But, judging from the paragraph, only one was used in the experiment, so only mentioning one in the answer choice seems alright. One might also wonder why they are saying that the gene may have developed as a *specific* defense against this species, implying that it only works against this one species, which seems like an unwarranted conclusion. The issue here is tangled into the final sentence, which brings in the other pathogen species. It says that the A gene is the defensive factor against the other pathogen, and we have just discovered that the B gene is the defensive factor against the pathogen in the experiment. So to claim that the B gene may have evolved *specifically* to defend against this one pathogen is ok after all. It's a conjecture, but a plausible one.

If you are an editor, send this question and its explanation back for a complete rewrite. With extreme prejudice. If you are a test-taker, just notice that answer B is the only one that focuses on the B gene as the defensive agent.

Answer A states that the A gene is the defensive factor, which may be tempting if you missed the word "silenced". But even then, you might realize that, if A was the defensive factor regardless of the presence of B, then *both* type A and type AB flies should survive, not just type A. Answer B makes a completely unwarranted conclusion about the A gene, and answer D makes a claim involving degrees of protection, about which we know nothing.

Problem 13

Official Answer: B

Why do companies buy and use "automation technology" instead of paying people to do work? Some people say it's because the technology is more productive. (Wouldn't the nature of the company make a huge difference? And why can't you just ask the companies themselves why they do it?) But Daron Acemoglu allegedly showed that the tax code might be another reason. Apparently, paying employees costs more in taxes than paying for equipment does.

But it's not just about the taxes. "Together, these findings suggest that ..." We need to take *both* findings into account. The increased productivity is "unremarkable" (according to Acemoglu), and inanimate machinery is cheaper tax-wise.

Now let's nitpick the answer choices. Which one seems like a logical conclusion to draw from machines not being that productive and labor costing a lot in taxes?

A — Let's rule out answer A based on "overestimation of the tax benefits". The rest seems ok, but nobody is claiming that the companies are overestimating the tax benefits of machinery.

B — We don't know what the government's motives were nor whether tax benefits count as a "direct" or "indirect" incentive, but otherwise answer B looks ok.

C — This one makes a prediction about the future, which is never correct on the SAT.

D — This one might seem reasonable, until you realize that it's false. Acemoglu never claimed that productivity went *down*, merely that it didn't go up much.

Problem 14

Official Answer: D

As best you can, work your way through this pile of jargon and see if you can get the gist of what's going on. The main issue seems to be the shapes of animals. The first sentence points out the curious case of star-like animals, which contrast with most other two-sided animals. ("Bilateral" means two-sided, but if you don't realize this, perhaps you can at least see that "normal" animals have a head and a tail and a front and a back, and starfish don't.) The second sentence adds to the mystery by stating that sea stars started out normal and then became radial, or star-like. (Incidentally, it is not uncommon for fish to start out normal and then become weird. Sole and flounder, for example, start out looking like normal fish, and then one eye migrates to the other side of their head and they start swimming sideways.) The whole second half of the paragraph is one long sentence with extra jargon. What are these "markers for corresponding anatomical regions" that you speak of? What in the world are "body patterning genes"? And what does it mean to "observe activity" in these genes? This is a lot to throw at non-biologists in the space of a single sentence. The gist of this sentence is that somebody studied star-like animals, and had a way of comparing or "matching" body parts somehow, and apparently found "head genes" in the animal's entire body, and some "tail genes" around the edges.

What does this imply? What used to be the animal's tail has now surrounded the rest of the body and forms the animal's outer edge. One might suppose that what used to be the head, or at least portions of it, now lies in the center of the animal.

Now let's nitpick the answer choices. "Despite the greater prevalence..."? Does the passage say anything about which if either of the genes is more prevalent? It only discusses where they are located, not how abundant they are. So we can probably rule out A. Was there ever any mention of a *third* body layout? There was only discussion of bilateral and radially symmetric layouts, so we can probably rule out B. The entire theme of the passage was bilateral versus radial symmetry, but answer C focuses on sea stars versus acorn worms, so we can probably rule that one out as well.

That only leaves D, which states, in a nutshell, that sea stars are mostly head and no trunk, which agrees with the genetic observations.

Problem 15

Official Answer: C

You might notice that three of the choices are singular verbs, and one is plural, so the plural one is probably correct. To confirm, check the paragraph to find out who is doing the studying. You might have some difficulty with this, however, because of the complex sentence construction. Be careful, because the subject is not Elba Serrano. The words between the commas form a parenthetical and can be thrown away. The true subject is "many scientists", so the clause after the dash, boiled down, is this: "many of whom study this mechanism." The subject "many" is plural, and the verb must be plural as well.

Problem 16

Official Answer: A

You might notice that there is one "strong joint", namely the colon, and three "weak joints", meaning that the colon is probably correct. To confirm, try looking for independent cluases. Try placing a period after "food". Everything up to "food" can stand on its own, and so can everything after (unless you add the "while"). So we have two independent clauses, requiring a strong joint, and making A the only correct answer. (Adding the "while" just makes the situation worse. It duplicates the function of the "but" later in the sentence.)

Problem 17

Official Answer: C

Start by looking for independent clauses on each side of the blank. "Divergent strategies emerged" and "coagulation methods became common" are both independent clauses, requiring a "strong joint" to link them (or a period to separate them). The only "strong" option we can choose is the colon.

Problem 18

Official Answer: A

After glancing at the answer choices, you might notice that there is one verb-like word with "-ing" on the end alongside three actual verbs. This should make you suspect that the ing-word is the correct answer. (Technically, it's a participle.) To confirm, see if the blank needs an actual verb or a modifier of some kind.

There are two sentences here, and the blank is in the second. There is a lot of distracting and confusing information in the first couple of lines of the second sentence, but the important thing to notice is that the main predicate phrase doesn't occur until nearly the end of the sentence. "These changes ... reflected the poet's perspective." The stuff in between is a list of examples of the changes, and this requires the participle. "These changes, including additions, removals, and insertions, reflected the poet's perspective."

Problem 19

Official Answer: C

First of all, notice that the words "at the time of their rediscovery by early twentieth-century modernists" is set off by a pair of commas and constitutes a parenthetical. It has no bearing on what words to put in the blank, and you can safely ignore it. Now that that nuisance distraction is out of the way, you might notice that the main predicate phrase of the sentence is "had been gathering dust". The spine of the sentence is "John Donne's works had been gathering dust." And answers A, B, and D all add a second verb to the sentence. If you throw away everything after "followed", then answer A would be perfectly appropriate. "John Donne's works were much admired during his lifetime and in the decades that followed." But if you keep the verb "had been gathering dust", then you can't also use the verb "were admired".

Answer C removes the second verb and makes "much admired during his lifetime and in the decades that followed" into another parenthetical. Answer C makes a long-winded but grammatically legitimate sentence.

Problem 20

Official Answer: B

You might notice that three of the verbs are plural and one is singular (try reading them with "it" or "they" as the subject), meaning that the singular verb is probably the correct answer. To confirm, let's find the subject that needs to go with this verb. What is it that is unique? The shape of each statue's ears. "The shape" is a singular subject, requiring the singular verb "is".

Problem 21

Official Answer: B

How are the sentences related? The first sentence describes how a firefly produces its glow. The second describes the cessation of the glow. A temporal word like "later" or "then" might work, but we aren't offered one of those. Since the first sentence could be viewed as describing the *beginning* of the process, and the second describes the *end* of the process, a contrasting word would also work, and we are offered one of those: "by contrast".

The second sentence does not provide an example, a specification, or a conclusion, making the other answer choices inappropriate.

Problem 22

Official Answer: B

Why would someone want to throw a bunch of beautiful sculptures into a pit and then call it *Judgement Day*? Why would anyone go to the trouble of making it look like he had?

Anyway, how are the sentences related? The first describes an appearance, and the second says that it's only an illusion. That's a contrast, and the only contrasting choice we are offered is "on the contrary".

Problem 23

Official Answer: A

What's the goal? To emphasize the length of the Turnpike. How long was it? Searching the notes, we find that it was 62 miles long, so the correct answer will probably contain this number. There is only one answer choice that mentions any distance of any kind.

Problem 24

Official Answer: C

What's the goal? To explain an advantage of the "Women and the Vote" format. Searching the bullet points, the only "advantage" we can find is in the last bullet point: it allows viewers to control the experience. Answer C repeats the information in this bullet point,

and all of the other answer choices contain only descriptive details, with no advantages.

Problem 25

Official Answer: D

What's the goal? To refute a claim that malapportionment in the Storting favors small urban districts. This could go in several different directions, so we'll need to check the bullet points to see if we can find anything that contradicts malapportionment favoring small urban districts. (By the way, don't be misled by "small" into thinking that we are talking about the country. "Small urban districts" refers to places in the *city*, not the country.) Most of the bullet points simply describe malapportionment and the Storting, and only the final bullet point gives us any consequences. Digging in to the final bullet point, we see that *rural* districts receive more seats, not *urban* districts. The correct answer will have to point this out.

Answer A claims that the rural districts are underrepresented, which is the opposite of what we want. We want to refute a claim that cities are favored, and answer A says that cities are favored. Answer B states that the claim isn't true, but does it really refute the claim? It also contradicts the data in the final bullet point, which says the less populated districts get more seats. Answer B implies that more populated districts get more seats. Answer C merely describes malapportionment, and doesn't give any information about who is over- or under-represented.

This leaves answer D, which states that the country is overrepresented compared to the city, contradicting the claim that the city is overrepresented, and it even identifies a cause for this effect: the formula that weights land area more heavily than population. This is a far more solid "refutation" than any of the other answer choices.

Problem 26

Official Answer: B

What's the goal? To present the study and its methodology. The correct answer will need to include something about the method. Looking at the bullet points, the only information we can find about the method is that it used "computer simulations", so the correct answer should mention computer simulations. Only one of the answer choices contains the words "computer simulations", and the other three all focus on the results or the motives instead of the method.

Problem 27

Official Answer: A

What's the goal? To emphasize the aim of the research study. If the answer option gives the methodology or the results instead of the goals, it is the wrong answer. What was the aim of the research study? Searching the notes, we find it in the second bullet point. It was to find out if woodland expansion is "related to climate" in some undefined way. Answer A looks pretty good already, since this is essentially what it says. Answers B and C give results, and answer D focuses on method.

Problem 1

Official Answer: D

The y-intercept is the point where a given line or curve crosses the y-axis. In this case, that happens at $y = 8$. If you want to be pedantic and express this as a coordinate pair, then it's (0,8).

Problem 2

Official Answer: D

$$\begin{aligned} f(x) &= -3x + 60 \\ f(-8) &= -3(-8) + 60 \\ &= 24 + 60 = 84 \end{aligned}$$

Problem 3

Official Answer: D

All four answer choices end in 70, which is the total length of the video. We clearly need a summation equation to total up the partial sums. The left side needs to have two terms, one for each of the two different kinds of segment. If there are x 1-minute segments, then the total length of the 1-minute segments must be $1x$ or x minutes. If there are y 3-minute segments, then the total length of the 3-minute segments must be $3y$ minutes. Only one answer choice contains either of these partial sums.

Problem 4

Official Answer: D

If 9 ounces are left, that means that 11 ounces disappeared. At a rate of four days per ounce, this means that it must have taken $11 \cdot 4 = 44$ days.

Problem 5

Official Answer: B

Always look for subtle differences between two very similar things. In this case, you'll notice that the two distributions are identical, except that one is shifted 13 to the right. This means that the mean and median of the second will be 13 higher than those of the first, but the standard deviations and the ranges will be the same.

All answer choices involve only the standard deviations, and answer B is the only one that states that they are equal.

Problem 6

Official Answer: A

They give us a mess, with four terms, and all four answer choices are simpler, with only two terms each. So following your instinct to simplify (which your schooling has hopefully given you) is a good place to start here. The trick is to get the signs right. Subtracting stuff in parentheses should always raise a caution light in your mind. When you see subtraction of parenthetical stuff, be extra careful to "distribute the subtraction", so to speak, and not make the mistake of accidentally adding the terms after the first one. In this case, when we remove the parentheses, we have

$$7x^3 + 7x - 6x^3 + 3x$$

Now we can go ahead and combine like terms, giving

$$x^3 + 10x$$

Notice that if you had forgotten to be careful with the signs when removing the parentheses, you might have gotten $7x^3 + 7x - 6x^2 - 3x$, which simplifies to $x^3 + 4x$, which is answer choice D. They put in answer choice D to see if they could catch you in a mistake.

Problem 7

Official Answer: C

We can easily deduce the value of angle C from the triangle sum theorem: $C = 180 - 54 - 90 = 36$. They have named the value of angle C to be $k/2$, for some reason, so we need to double 36 to obtain the value of k: $k = 36 \cdot 2 = 72$.

Problem 8

Official Answer: B

Since the equation is given in factored form, the solutions are easy to see. Any value of x that makes one of the factors equal to zero will make the entire product equal to zero, so there are three solutions to this equation, and they are 0, 4, and -5. Being careful not to mix up the signs, we see that only one of these is listed among the answer choices.

Problem 9

Official Answer: 46

This is "medium" difficulty? Perhaps they are assuming that you have taken chemistry and will be distracted by the worry that the mixture volume might not exactly equal the sum of volumes of the ingredients.

If the total is 56, and one part is 10, then the other part must be 56-10=46. Apart from the chemical issue of volumes of mixtures, this is a 2nd grade subtraction problem.

Problem 10

Official Answer: D

If one furlong contains 220 yards, then 354 furlongs must contain 354·220=77,880 yards. If each yard contains 3 feet, then 77,880 yards must contain 77,880·3=233,640 feet.

Problem 11

Official Answer: A

If you can read the slope and y-intercept from equations written in slope-intercept form, this one's a piece of cake. The two lines have the same slope (2), but different y-intercepts (10 and -1), so they are parallel and never intersect.

Problem 12

Official Answer: 52

What fraction of 25 is 13? You could take the fraction 13/25, turn it into 52/100 in your head by multiplying both numbers by 4, and conclude that 13 is 52% of 25.

If you want to be a little more formal, you can translate the given statement from English into symbols. "13 is p% of 25" becomes "$13 = \frac{p}{100} \cdot 25$". Solving this equation gives $p = 52$.

Problem 13

Official Answer: 410

The growth factor in the given exponential function is 2, so the population will double every time the exponent increases by 1 ... and this will happen every time t increases by 410. If you are in doubt, just notice that the population starts at 60,000 at $t = 0$, and ask yourself what has to happen for the population to double the first time. The time t has to become 410 to make the exponent become 1.

Problem 14

Official Answer: C

They tell you in the first line that the value *increases*, which rules out the first two answer choices. The remaining question is whether the investment increases linearly (by the same amount of money every year), or exponentially (by the same growth factor every year). If the investment increased by the same dollar amount every year (as investments did before compound interest was invented), then that would be linear growth. If anything increases by the same percentage every year, that's growing by the same *factor* every year, meaning exponential growth. (In this case, it grows by the factor 1.0049 every year, which seems like a pretty poor return on investment, but return on investment is not something that the SAT cares much about.)

Problem 15

Official Answer: 5

This problem contains several simple steps arranged in an unfamiliar and ornery way. Let's start with the given endpoints: (2,4) and (2,14). These are endpoints of a diameter, so we can figure out how big the circle is by finding the distance between these two point. You might notice that both points have the same x-coordinate. In other words, it's a vertical line, and the length is simply the difference between the two y-coordinates, or 10. So the circle's diameter is 10 units.

Next, they tell us that the equation of the circle is $(x-2)^2 + (y-9)^2 = r^2$. If you are familiar with how "equations of circles" work, you will realize that the two numbers 2 and 9 give us the circle's center coordinates, and the missing number r is the circle's radius. So, when they ask for the value of r, they are really just asking for the circle's radius. (The center coordinates are irrelevant.) But we already know that the circle's diameter is 10, so the radius must be half of that, or 5.

Alternately, you could deduce that the circle's center is located at (2,9) and then apply the distance formula to the center of the circle and one of the two endpoints. This is what the official "explanation" does, but it involves more calculation.

Problem 16

Official Answer: B

A sketch might be helpful to keep the information straight, but there isn't that much information to deal with here. We have a single right triangle, they give us the sine of one of the acute angles, and they ask us for the cosine of the other. If you are familiar with the fact that sines and cosines of complementary angles are

equal to each other, the answer is obvious. You don't even have to do any calculating.

$$\cos(S) = \sin(R) = \frac{\sqrt{15}}{4}$$

If you aren't familiar with complementary angles, they are worth reviewing, because they are sometimes useful on the SAT. If a and b are the two acute angles in a right triangle, then $\cos(a) = \sin(b)$ and $\sin(a) = \cos(b)$.

Problem 17

Official Answer: A

Notice that they ask for $4j + 9$, which is exactly the expression in the denominator of the fraction. To obtain $4j+9$ by itself, we can just flip the equation upside down, and then multiply by k:

$$p = \frac{k}{4j+9}$$

$$\frac{1}{p} = \frac{4j+9}{k}$$

$$4j + 9 = \frac{k}{p}$$

Problem 18

Official Answer: D

When they give you four tables as answer choices, the x-values are usually the same in all four. In this problem, this means we can just construct our own table of limits for the three values. Let's create a table of values for $y = 13x - 18$, and then check the answer choices against it.

x	$13x - 18$
3	21
5	47
8	86

The only choice for which all three values are greater than (and not equal to) these values is D.

Problem 19

Official Answer: 0.25,1/4

We can find the slope of line l by rearranging the equation into slope-intercept form.

$$\begin{aligned} 3y + 12x &= 5 \\ 3y &= -12x + 5 \\ y &= -4x + ... \end{aligned}$$

All we care about is the slope, which is -4. The slope of any perpendicular line will be the opposite reciprocal of this, or $+1/4$. The decimal equivalent, `0.25`, is also an acceptable answer.

Problem 20

Official Answer: B

The x-intercepts are all of the locations where the curve crosses the x-axis, i.e. where $y = 0$. Since the equation is given in factored form, the x-values that make $y = 0$ are easy to find. Any value of x that makes one or more of the factors equal to zero will make the product zero. From the equation, we can see that there are three such values: d, $-d$, and $-g$. (There are actually four factors, but one of them is repeated, and the question asked for *distinct* x-intercepts.) So the answer is 3.

Problem 21

Official Answer: C

This problem is confusingly worded. They have decided that, whatever $f(1)$ is equal to, they are going to name it k for no apparent reason. They've also tucked an important piece of information into a careless adjective in the middle of a long sentence. All four of the answer choices are *equivalent*, meaning they are all just different forms of the same function, and they should all give the same values of $f(x)$ no matter what you plug in for x. (Go ahead and try it if you like.) They tell us that $f(1) = k$, so why not plug $x = 1$ in to one of the functions and see what we get? Which one of the four should we try? It doesn't matter, since they're equivalent. The easiest one to evaluate will be the third, since that makes the exponent zero, and the multiplier 1:

$$f(1) = 128(1.6)^0 = 128(1) = 128$$

So $k = 128$. Now we just need to find which of the four answer choices has a "128" somewhere. Obviously C does, so that's our answer.

Incidentally, this type of problem, in which they give you four "equivalent forms" of the same function and you have to pick the one that displays a certain value, appears more than once in the SAT practice tests. So it might be worth remembering this sort of setup.

Problem 22

Official Answer: A

Don't bother trying to come up with a formula for $g(x)$. Just find out where $f(x)$ reaches a minimum, and then subtract 5. To find the location of the minimum of $f(x)$, you could try graphing the function in your calculator. All of the answer choices are integers, so you don't have to worry too much about precision when reading the graph.

Alternately, if you remember the vertex formula, finding the location of f's minimum algebraically isn't too hard.

$$\begin{aligned} x &= \frac{-b}{2a} \\ &= \frac{-64}{2(4)} = -8 \end{aligned}$$

Subtracting 5 from this value to locate g's minimum gives $-8 - 5 = -13$.

Problem 1

Official Answer: C

This is a basic graph-reading question. The percent of cars for sale is represented vertically on the y-axis, and the lowest point occurs at 2014.

Problem 2

Official Answer: D

Every time the object covers 64 yards, it must cover 64·3=192 feet. A rate of 64 yards per second is the same as a rate of 192 feet per second.

Problem 3

Official Answer: B

If all three sides total to 18, and two sides are 4 and 6, then the remaining side must be 18-4-6=8.

Problem 4

Official Answer: C

$$\text{Distance} = \text{Speed} \cdot \text{Time}$$
$$d = 30t$$
$$? = 30 \cdot 2$$

Once you see through the messy setup, you just have to multiply 30 by 2 to obtain 60.

Problem 5

Official Answer: D

You might scan down the answer choices, think B looks pretty good, pick that one, and move on to the next question. But to do that would be to fall into a trap for hastiness.

We need two terms, one to account for the initial fee, and one to account for the hourly fee. This rules out answer choices A and C. But if you pay close attention to the numbers, you'll notice that B has the numbers backwards. It writes 10 for the flat fee and 25 for the hourly rate.

Problem 6

Official Answer: D

We don't care whether the members live east or west of the river, so we can simply focus on the right-hand "Total" column. There are 135 members altogether and 107 of them are at least 40 years old, so the probability of picking an old person from the organization is 107/135.

Problem 7

Official Answer: B

We can rule out A and D right away because they have the zero in the wrong place. A and D give x-intercepts, not y-intercepts. Can you tell the difference between the slope and the y-intercept? That's all you need to do to distinguish between B and C. In the function $f(x) = mx - 2$, the y-intercept is -2. Or if you want to be unnecessarily formal and express it as a coordinate pair, the y-intercept is (0,-2).

Problem 8

Official Answer: A

If $g(x)$ equals both 25 and $x^2 + 9$, then we can just equate these two things and solve for x:

$$\begin{aligned} 25 &= x^2 + 9 \\ x^2 &= 25 - 9 = 16 \\ x &= \pm\sqrt{16} = \pm 4 \end{aligned}$$

The answer choices don't list any negative numbers, so we can pick +4, which is answer choice A.

Problem 9

Official Answer: D

It's hard to tell what skill they are trying to test with this one. Just read the coordinates of the three dots and compare them to the tabulated values. The line obviously doesn't pass through the origin, so you can immediately rule out A and B. Checking either of the other two coordinate pairs in the table should lead you to answer D.

Problem 10

Official Answer: 70

Around a transversal to two parallel lines, any acute angle and any obtuse angle are always supplementary to each other, meaning they have to sum to 180°. So if an obtuse angle is 110, the acute angle must be 180-110=70.

There are formal technical names for many of the angle pairings surrounding transversal-parallel intersections, such as "alternate interior" and "consecutive", but they really don't help you on the SAT. Don't worry about them. Just remember that all obtuse angles are the same, and all acute angles are the same, and the obtuse angles are supplementary to the acute angles.

Problem 11

Official Answer: 9

This is a straightforward mean calculation. There are 10 numbers, so just sum the numbers and divide by 10.

$$\frac{6+10+13+2+15+22+12+4+4+4}{10} = \frac{90}{10} = 9$$

Problem 12

Official Answer: A

$$\begin{aligned} f(x) &= 4x + b \\ 28 &= 4(7) + b \\ b &= 28 - 28 = 0 \end{aligned}$$

Problem 13

Official Answer: B

Whenever they give you an equation to solve, but instead of asking you for x, they ask you for some more complex expression, see if there is something simple you can do to turn one side of the equation into the requested expression. In this case, you can simply multiply the given equation by 4.

$$\begin{aligned} 4x + 2 &= 12 \\ 4(4x) + 4(2) &= 4(12) \\ 16x + 8 &= 48 \end{aligned}$$

So 48, or answer B, is the correct answer.

Problem 14

Official Answer: B

One way to answer this question would be to graph the two equations in your graphing calculator and find the intersections. The algebraic way would be to equate the two expressions for y, giving a quadratic equation, which you can then solve:

$$\begin{aligned} 76 &= x^2 - 5 \\ x^2 &= 81 \\ x &= \pm 9 \end{aligned}$$

Positive 9 is not an answer choice, so we have to pick answer B, -9.

Problem 15

Official Answer: C

They probably could have just said "What is the value of x?" But stating that "The solution to the given system of equations is (x, y)" is their stilted way of saying explicitly that they want you to solve for x. There could be many pairs of x and y that *don't* solve the system, and they want to be clear that they are asking for the unique value of x that is in fact a solution to the system.

Anyway, since we don't care about y, and one of the equations is already solved for y, all we have to do is substitute $-3x$ for y into the second equation and then solve for x, which is almost carelessly simple:

$$4x + (-3x) = x = 15$$

Problem 16

Official Answer: 25

Subtracting the venue fee of \$35 from the budget of \$300 leaves \$265 left over to pay for attendees. Dividing this by \$10.25 per attendee gives 25.854... people. This means that 26 attendees would be over budget, and 25 is the maximum acceptable number.

Problem 17

Official Answer: 2, -12

This is a straightforward "solve the quadratic equation" problem. The equation is already given in standard form, so we could use the "always works" method of plugging the coefficients into the quadratic formula. However, quadratic equations on the SAT are often factorable, and factoring is usually faster, easier, and less error-prone than using the quadratic formula ... especially if the leading coefficient is 1, which it is in this case. Searching for a pair of numbers that give -24 when

you multiply them and 10 when you add them, we find the pair to be 12 and -2. Thus we can write

$$z^2 + 10z - 24 = (z + 12)(z - 2) = 0$$

and the solutions to this equation are clearly -12 and 2 (i.e. the solutions to $z + 12 = 0$ and $z - 2 = 0$). Either of these numbers will be accepted as the correct answer.

If you want to use the quadratic formula, it looks like this:

$$\begin{aligned} x &= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \\ &= \frac{-10 \pm \sqrt{100 - 4(1)(-24)}}{2(1)} \\ &= \frac{-10 \pm \sqrt{100 + 96}}{2} \\ &= \frac{-10 \pm 14}{2} \\ &= \frac{4}{2} = 2 \text{ OR } \frac{-24}{2} = -12 \end{aligned}$$

Problem 18

Official Answer: A

Since the coefficient of an exponential expression represents the starting value, we can rule out B and C right away for not giving the correct initial balance. The difference between A and D lies in the rate factor. Since we need to model a growth instead of a decay, the rate factor must be greater than 1, eliminating D and making A the correct answer.

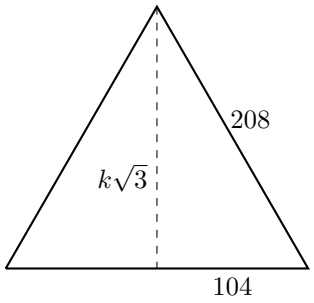
The official "explanation" uses the given numbers to construct the formula from scratch, which is far more work than you need to do.

Problem 19

Official Answer: 104

This one looks unpleasant, but it really isn't too bad, especially if you remember your 30-60-90 triangle ratios, and that a 30-60-90 triangle is what you get when you cut an equilateral triangle in half. (And if you've forgotten the ratios, there is a 30-60-90 triangle on the reference page.)

Start by remembering what it means for a triangle to be "equilateral". An equilateral triangle is the most perfect and most symmetric of all the triangles, the one with all three sides and all three angles equal to each other. ("Isosceles" triangles are also symmetric, but only across one line of symmetry. They only have two sides and two angles equal to each other.) Now, with three equal sides and a perimeter of 625 cm, can you deduce how long each side is? It's merely one-third of the total, or 208 cm. The "height" is another name for "altitude." If you aren't sure what it means, there aren't really many ways to misinterpret it. It's just "how high" the triangle is. More precisely, it's the perpendicular distance from the lower base to the upper vertex. And we are told that this has a value equal to $k\sqrt{3}$, or $\sqrt{3}$ times something. In other words, we have a situation like this:



If you recognize that the altitude cuts the triangle into two 30-60-90 right triangles, this should be a piece of cake. If you don't, you can see that it's true by asking "what are the angles of each of the two sub-triangles?" The angles in an equilateral triangle are all 60 (one-third of 180), and the altitude cuts the vertex angle into two equal halves of 30 each. So looking at each half-triangle, we see that their angles are 30, 60, and 90.

Now, let's focus our attention on the right-hand triangle, and see if we can deduce the lengths of the sides. We already know two of them, and the third is the length in question, i.e. the altitude of the original equilateral triangle. (Along the base, the altitude cuts the base into two equal segments of 104 cm each.) Recalling the ratios in a 30-60-90 triangle (1:2:$\sqrt{3}$), we see that k is simply 104.

If you didn't recognize the 30-60-90 triangle, you could still deduce the length of the altitude using the Pythagorean Theorem:

$$h = \sqrt{208^2 - 104^2} = 104\sqrt{2^2 - 1^2} = 104\sqrt{3}$$

Problem 20

Official Answer: B

This one takes a small amount of creative thinking. The

two crossed diameters divide the entire circumference of the circle into four symmetric pieces. (You probably won't need much convincing that the two smaller arcs must equal each other and the two larger arcs must also equal each other. But if you want to be formal about it, you could notice that either of the smaller arcs plus either of the larger arcs must always add up to a semicircle. You could also notice that the crossed diameters form two pairs of vertical angles, and you could remember that vertical angles are equal, and that equal central angles in a circle cut off equal arcs of the circumference.)

Since the larger arcs are twice as long as the smaller arcs, and a large arc plus a small arc must make a semicircle, this must mean that the crossed diameters are dividing the circle into sixths. Each small arc is one-sixth of a full circle, and each large arc is two-sixths, or one-third, of the full circle. Since we are told that the entire circumference of the circle is 144π, we can just divide this amount by three to find the length of the large arcs, of which QR is one: $144\pi \div 3 = 48\pi$.

Problem 21

Official Answer: 6

This looks like a "common factor" problem, but they are asking it in a weird way. They've removed a common factor from $90y^5 - 54y^4$ to produce the factored expression $ry^4(15y - 9)$. The question amounts to "what's the numerical portion of the common factor"? We don't even have to search for the common factor, because they give us the other factors: 15 and 9.

Dividing 90 by r gives 15, and dividing 54 by r gives 9. So what's r? The answer is 6. Six is the common factor of 90 and 54. (It's not the *greatest* common factor, since you could still remove a 3 from both 15 and 9, and make the expression even simpler. In simplest form, $90y^5 - 54y^4 = 18y^4(5y - 3)$. But 6 is the co-factor corresponding to the two factors given.)

Problem 22

Official Answer: C

They give us two sides of a right triangle and ask for the third, so the Pythagorean Theorem is going to come in handy. Since they give us a leg and the hypotenuse, we'll have to use the Pythagorean Theorem backwards:

$$\begin{aligned} c^2 &= a^2 + b^2 \\ b &= \sqrt{c^2 - a^2} \\ &= \sqrt{196.8^2 - 43.2^2} \\ &= 192 \end{aligned}$$

Problem 1

Official Answer: C

You'll probably notice that all four answer choices begin with "$4x =$", and the given expression begins with "$4x + 6 =$". All you need to do is subtract 6.

$$\begin{aligned} 4x + 6 &= 18 \\ 4x &= 18 - 6 = 12 \end{aligned}$$

Problem 2

Official Answer: C

This is an evaluation problem disguised as a word problem.

$$\begin{aligned} \text{Total Cost} &= 36 \cdot \text{Monthly Payment} + 1000 \\ f(x) &= 36x + 1000 \\ f(400) &= 36(400) + 1000 \\ &= 14,400 + 1000 = 15,400 \end{aligned}$$

Problem 3

Official Answer: A

This one deals with vertical translations and y-intercepts, so a wise place to begin is by rewriting the equation in slope-intercept form.

$$\begin{aligned} 27x + 33y &= 297 \\ 33y &= -27x + 297 \\ y &= -\frac{27}{33}x + \frac{297}{33} \end{aligned}$$

The intercept of the given graph is 297/33=9, and shifting the graph down 5 units will lower the y-intercept to $y = 9 - 5 = 4$. Expressed as a coordinate pair, this is (0,4).

Problem 4

Official Answer: B

We can rule out A and D right away because they have the zero in the wrong place. A and D give x-intercepts, not y-intercepts. Can you tell the difference between the slope and the y-intercept? That's all you need to do to distinguish between B and C. In the function $f(x) = mx - 2$, the y-intercept is -2. Or if you want to be unnecessarily formal and express it as a coordinate pair, the y-intercept is (0,-2).

Problem 5

Official Answer: B

This is a little sneaky. They say, "Which equation *could* represent this relationship?" This is your hint that if you write the equation based on the information in the graph, you probably won't get one of the answer choices. You'll probably get an *equivalent* equation.

If you start by running your eye over the answer choices, you may notice that A and C are in slope-intercept form, and they both have positive slopes. The graph descends to the right, which means it has a negative slope, so you can rule out A and C right away.

Since the intercepts are obvious in the graph, another way to approach this problem would be to plug in $x = 0$ and $y = 0$ to the four answer choices and see which one gives the correct intercepts. Plugging $x = 0$ into the four equations gives y=12, 40, 8, and 60, respectively. Only one of these is the correct value for the y-intercept. Plugging $y = 0$ into the four equations gives x=-3/2, 60, -2/3, and 40, respectively. Again, only one of these is the correct value for the x-intercept.

The long way to solve this problem would be to write the equation based on information from the graph, and then see if it can be rewritten to match one of the answer choices. You are probably more familiar with linear equations in slope-intercept form than in standard form, so let's start with that. The y-intercept is 40, and the line descends by 40 over a range of 60, so the slope is $-\frac{40}{60} = -\frac{2}{3}$. The equation of the graph in slope-intercept form is therefore

$$y = -\frac{2}{3}x + 40$$

This fails to match either A or C. Both equations in standard form, B and D, have a constant term of 480, so if we rewrite our equation in standard form and then scale it so that the constant term is 480, it should match either B or D. Multiplying our equation by 3 to clear the fraction gives

$$\begin{aligned} 3y &= -2x + 120 \\ 2x + 3y &= 120 \end{aligned}$$

You might see right away that the coefficient on y must be larger than the coefficient on x, or you might see that you can scale the equation up to 480 by multiplying the equation by 4. Either way, you're led to answer B.

Problem 6

Official Answer: D

Trying to solve this by the usual, direct, "brute-force"

methods is going to be really obnoxious. Is there a shortcut? Is there a way to produce the requested expression $\frac{17}{2}x + 18y$ in a more direct way by adding or subtracting the equations?

Looking just at the y-terms, we can see that doubling either equation and adding it to the other will produce a term of $18y$. Is there a way to produce the term of 17/2x? Looking at just the x-terms, we can see that doubling the first and adding the second will produce 19 halves, not 17. Doubling the second and adding the first will produce 17 halves. So we can produce $\frac{17}{2}x+18y$ by doubling the second equation and adding it to the first. Doubling 23 and adding it to 25 produces 46+25=71.

Written out, adding the first equation to twice the second equation looks like this:

$$\frac{7}{2}x + 2 \cdot \frac{5}{2}x + 6y + 2 \cdot (6y) = 25 + 2 \cdot 23$$
$$\frac{7 + 2 \cdot 5}{2}x + (6 + 2 \cdot 2)y = 25 + 46$$
$$\frac{17}{2}x + 18y = 71$$

Problem 7

Official Answer: B

You could go through five minutes of tedious labor checking all of the given values of x to see if they produce the given values of y. But there's a much easier way. Whenever you see an expression that is given to you in factored form, ask yourself if the zeros of the function would be useful, because you can find the zeros with almost no effort. They are the values of x that make each of the factors equal to zero. In this case, x=-6, -5, and +4 are the three zeros. And do you notice that all three data tables give these three values of x? So if they were asking you for a data table for simply $f(x)$, you would expect this:

x	y
-6	0
-5	0
4	0

Since they ask for a data table for $f(x) - 3$, we need to shift these y-values down by three. Notice that only two data tables give identical y-values for all three x-values, and only answer B represents the three zeros shifted down by 3.

Problem 8

Official Answer: C

This problem is listed as "hard", but if you recognize that a decreasing exponential function requires a base that is less than one, you can pick the correct answer right away. Only one function has a base that is less than one. All the other represent *increasing* functions.

To tackle this more directly, notice that we have four answer choices, all of them exponential functions, and all with x as the exponent. We need to choose the appropriate coefficient and base. In exponential functions, the coefficient is always the starting point or initial value (or the y-intercept if you graph it). Given that $q(0) = 14$, we know the coefficient must be 14, so that narrows our choices to C and D. Answer D would be correct for a 45% *increase*, but we need a 45% *decrease*, and 100%-45%=55%, which corresponds to a multiplying factor of 0.55, which makes C the correct answer.

Problem 9

Official Answer: 35

If $g(x)$ represents the depth below the surface, then $g = 0$ when the submersible is at the surface. In other words, we need to find the solutions to $g = 0$. This is relatively easy, since the equation is given in factored form. The two solutions are -19 and +35. Apparently, the submersible started out at the surface 19 minutes before collecting the sample, and it returned to the surface 35 minutes after collecting the sample.

Problem 10

Official Answer: A

We have a sphere inside a cube. We know the sphere is perfectly nested or "inscribed" inside the cube, because they tell us that the sphere touches (or "is tangent to") the center of each face of the cube. They also give us the dimensions of both objects, and we can see that the side of the cube exactly equals the diameter of the sphere. So to find the volume of the space inside the cube but outside the sphere, we have to calculate the volumes of both shapes and then subtract the second from the first.

Hopefully you remember that the volume of a cube is simply the cube, i.e. the third power, of the edge length. If you've forgotten, you can use the formula for a box with all sides the same, and the formula for a box is on the reference page. If you've forgotten how to calculate the volume of a sphere, that formula is also on the reference page. You can punch the numbers into your

calculator straightaway, or you can do some simplifying before you calculate:

$$\begin{aligned} \text{Cube} - \text{Sphere} &= 68^3 - \frac{4}{3}\pi 34^3 \\ &= 2^3 \cdot 34^3 - \frac{4}{3}\pi 34^3 \\ &= (8 - \frac{4}{3}\pi)34^3 \\ &\approx 149,796 \end{aligned}$$

Problem 11

Official Answer: 29/3, 9.666, 9.667

The equation is a mess, but you'll notice that if you expand it, you won't get any powers higher than 2, so it's a quadratic equation. Start by rearranging it into the more familiar "standard form".

$$\begin{aligned} x(x+1) - 56 &= 4x(x-7) \\ x^2 + x - 56 &= 4x^2 - 28x \\ 0 &= 3x^2 - 27x + 56 \end{aligned}$$

27 is a multiple of 3, but unfortunately 56 isn't, so you can't simplify the coefficients any further. Quadratic expressions on the SAT are almost always factorable. If the leading coefficient is 1, try factoring, because that is almost always the fastest and least error-prone method. If the leading coefficient is not 1, it's a toss-up between trying to factor or using the quadratic formula.

In this case, you can factor the given expression as follows:

$$0 = (3x - 8)(x - 7)$$

This makes the two solutions 8/3 and 7. Since they ask for the sum of the solutions for some strange reason, we need to add these two together, yielding 29/3 or $9.\bar{6}$. You can enter "29/3" or "9.666" or "9.667" into the answer box. (The SAT can be frustrating in many ways, but they're pretty lenient with rounding rules.)

Problem 12

Official Answer: C

When they give you four tables as answer choices, the x-values are usually the same in all four tables. In this case, this makes it easy to just construct our own table of limits. Let's create a table of values for $y = 6x + 2$, and then check the answer choices against it.

x	6x+2
3	20
5	32
7	44

The only answer choice for which all three values are less than (and not equal to) these values is C.

Problem 13

Official Answer: B

This one is classified as "hard", but if you can interpret the parameters in the equation of a circle, you can do this one in your head. If you don't recognize equations of circles, they're worth reviewing, because they are not uncommon on the SAT. The two numbers inside the parentheses represent the x and y coordinates of the center of the circle, and the constant term represents the square of the radius. So this circle has a center at (5,3), and a radius of $\sqrt{16} = 4$. Since they ask us for the diameter, we double the radius to obtain 8.

Problem 14

Official Answer: C

Whenever they give you a quadratic expression and tell you how many solutions there are, think of the discriminant. Let's try plugging the given information into the discriminant and see what we can see.

$$\Delta = b^2 - 4ac = 30^2 - 4(-9)c = 900 + 36c$$

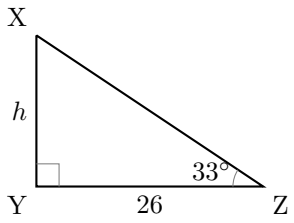
For there to be exactly one solution, the discriminant must be equal to zero, so let's set this equal to zero and solve for c.

$$900 + 36c = 0$$

$$c = -900/36 = -25$$

Problem 15

Official Answer: 338



If we can express the area of this triangle as a formula containing "tan(33°)", then we can compare coefficients

and determine the value of k. How do you calculate the area of a triangle? It's one half of the base multiplied by the height. We know the base already, and we can deduce the height using trigonometry.

$$\tan 33^\circ = \frac{h}{26}$$
$$h = 26 \tan 33^\circ$$

Now we just have to express the area, and then compare patterns.

$$\begin{aligned}\text{Area} &= \frac{1}{2}bh \\ &= \frac{1}{2}(26)(26 \tan 33^\circ) \\ &= 338 \tan 33^\circ\end{aligned}$$

Comparing this to the requested pattern, $k \tan 33$, we see that $k = 338$.

Problem 16

Official Answer: 1.8, 9/5

Always be careful when working percents backwards. It might be helpful to make yourself a grid or list of sorts:

Wholesale	Regular	Sale
?	11.70	?

We know the regular price, and we know that the sale price is 80% less than the regular price, so the first step is easy (as long as you correctly interpret "80% *less than*" and don't mistake it for "80% *of*"). The sale price is 80% less than the regular price, meaning that 20% of the regular price remains. So the sale price is 1/5 or 0.2 times the regular price, and we can add this to our table.

Wholesale	Regular	Sale
?	11.70	2.34

Here is where we need to be careful. The sale price is 30% greater than the store's cost for the shirt. This does *not* mean that the store's cost is 70% of the sale price. Percents are always relative to the starting point, and when you swap starting points around, you mess up the percentages.

Whenever you deal with tricky percent problems (either working percents backwards, or dealing with a string of successive percents), always turn them into multiplication problems. In this case, we know that the sale price is 30% greater than the store's cost, which as a multiplication problem becomes this:

Sale Price = 1.3 x Store's Cost

Inverting this multiplication problem is easy: You just divide.

Store's Cost = Sale Price ÷ 1.3

2.34/1.3 = 1.80, so the answer is \$1.80.

Problem 17

Official Answer: C

Whenever you meet a pair of triangles on an SAT problem, they are probably similar. You can confirm that this is true in this case, because there are two pairs of angles that are equal to each other. Since angles in a triangle must always sum to the same value (180), two angles are sufficient to fix or determine the shape of a triangle. So we have two similar triangles, meaning they have the same shape, and our job is to determine whether or not they are also congruent, meaning the same size as well as the same shape. The measure of angle A won't help us determine the size. The length of one side of *one triangle* is not enough either. That determines the size of one triangle, but the size of the other triangle is still up in the air. To determine that the two triangles are the same size, we need to know the lengths of *both sides in a corresponding pair*. So answer C is correct. Answer D would be correct if they had asked about similarity. We already know the two triangles are similar, based on the angles.

Problem 18

Official Answer: -34

For the system to have no solution, the slopes of the two lines need to be the same, so let's rewrite both equations in slope-intercept form and then compare slopes.

First equation:

$$\begin{aligned}48x - 72y &= 30y + 24 \\ 48x - 24 &= 102y \\ y &= \frac{48}{102}x - \frac{24}{102} \\ &= \frac{8}{17}x - \frac{4}{17}\end{aligned}$$

Second equation:

$$ry = \frac{1}{6} - 16x$$
$$y = -\frac{16}{r}x + \frac{1}{6r}$$

The slopes must be the same, so we can equate the two slopes and then solve for r:

$$\frac{8}{17} = -\frac{16}{r}$$
$$\frac{17}{8} = -\frac{r}{16}$$
$$r = \frac{17}{8} \cdot -16$$
$$= 17 \cdot -2 = -34$$

If you are comfortable working with equations in standard form, you could have accomplished the same thing with a little less work and fewer fractions by rewriting both equations into standard form, and then making sure the four coefficients were proportional.

Problem 19

Official Answer: D

You could try factoring the four expressions. If you do, you might notice that all four choices have the same leading and trailing terms. We are told that one factor is $x + 2b$, which means that the other factor must be $3x + 7$. Multiplying these two factors together gives

$$(x + 2b)(3x + 7) = 3x^2 + 6bx + 7x + 14b$$
$$= 3x^2 + (7 + 6b)x + 14b$$

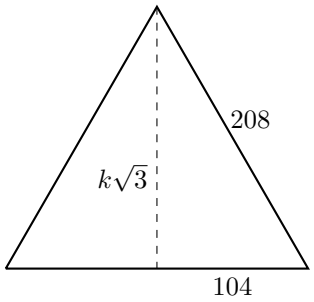
We are told that b must be a positive integer, so there aren't many possibilities for b that will produce a value of $7 + 6b$ that is less than 50. Trying $b = 1$, we find the middle coefficient would have to be 13. A value of $b = 2$ gives 19. If we jump ahead to $b = 5$, we find the coefficient to be 37. Trying $b = 7$ gives 49, which matches answer D.

Problem 20

Official Answer: 104

This one looks unpleasant, but it really isn't too bad, especially if you remember your 30-60-90 triangle ratios, and that a 30-60-90 triangle is what you get when you cut an equilateral triangle in half. (And if you've forgotten the ratios, there is a 30-60-90 triangle on the reference page.)

Start by remembering what it means for a triangle to be "equilateral". An equilateral triangle is the most perfect and most symmetric of all the triangles, the one with all three sides and all three angles equal to each other. ("Isosceles" triangles are also symmetric, but only across one line of symmetry. They only have two sides and two angles equal to each other.) Now, with three equal sides and a perimeter of 625 cm, can you deduce how long each side is? It's merely one-third of the total, or 208 cm. The "height" is another name for "altitude." If you aren't sure what it means, there aren't really many ways to misinterpret it. It's just "how high" the triangle is. More precisely, it's the perpendicular distance from the lower base to the upper vertex. And we are told that this has a value equal to $k\sqrt{3}$, or $\sqrt{3}$ times something. In other words, we have a situation like this:



If you recognize that the altitude cuts the triangle into two 30-60-90 right triangles, this should be a piece of cake. If you don't, you can see that it's true by asking "what are the angles of each of the two sub-triangles?" The angles in an equilateral triangle are all 60 (one-third of 180), and the altitude cuts the vertex angle into two equal halves of 30 each. So looking at each half-triangle, we see that their angles are 30, 60, and 90.

Now, let's focus our attention on the right-hand triangle, and see if we can deduce the lengths of the sides. We already know two of them, and the third is the length in question, i.e. the altitude of the original equilateral triangle. (Along the base, the altitude cuts the base into two equal segments of 104 cm each.) Recalling the ratios in a 30-60-90 triangle (1:2:$\sqrt{3}$), we see that k is simply 104.

If you didn't recognize the 30-60-90 triangle, you could still deduce the length of the altitude using the

Pythagorean Theorem:

$$h = \sqrt{208^2 - 104^2} = 104\sqrt{2^2 - 1^2} = 104\sqrt{3}$$

Problem 21

Official Answer: B

This one takes a little creative thinking. As with many SAT questions, it's quite artificial, but you can reason it through with a little effort. Start by noticing that the two histograms are identical, except that the first one is shifted one bar to the right. Each "bin" or "bar" in a histogram tells you how many data points are inside, but it doesn't tell you anything about where they are within the bar. All of the data points could be crowded up against the left side, or up against the right side, or they could be scattered around in any manner within the bin. The question asks for the smallest possible difference between the two data sets, so let's ask how we can make the two data sets as close to each other as possible. We can make all of the data in the first set (Data Set A) crowd up against the left-hand walls of their respective bins. In other words, we have three data points at 20, four at 30, 7 at 40, and 9 at 50. And we can make all of the data in the second set (Data Set B) crowd up against the right-hand walls of their respective bins. They have to be integers, but less than the boundary value, so this means we'll have three data points at 19, four at 29, 7 at 39, and 9 at 49. In other words, Data Set A will be identical to Data Set B, but shifted one unit to the right. That's the only way to make the two data sets as close to each other as possible, yet still have the histograms shown.

Now, if we have two data sets like this, what's the difference between their means? The difference in the *sums* is 23, because there are 23 data points in the set. The difference in the *means* is simply 1, because they are identical except for having every value shifted by one.

Problem 22

Official Answer: B

This one is suspiciously easy, especially given the previous two problems, and given the fact that this is the last problem in the module. If this worries you, it probably should. Double-check the problem for things you may have missed. In this problem, you need to catch the sneaky use of small prepositions. They did not ask how many votes Angel Cruz would win *with*, they asked how many votes he would win "by". The question is not how many votes did he receive, the question is how many "more" votes did he receive than Terry Smith?

Having caught this bit of sneakiness, the rest is straightforward. We simply need to extrapolate from the sample of 803 up to the total population of 6424. You could extrapolate both vote totals (483/802·6424 = 3864, and 320/803·6424=2560), and then take the difference (3864-2560=1304). Or you could just calculate the difference and then extrapolate that (483-320=163, and 163/803·6424=1304). Either way, the correct answer is B.

You'll notice that Angel Cruz's vote total of 3864 is given as one of the answer choices. So we can infer that the sneaky use of prepositions was probably deliberate and not accidental. One has to wonder how valuable it is for college admissions people to know whether you can catch things like this or not.