#1
ID: 7a5a74a6

$3(2x - 6) - 11 = 4(x - 3) + 6$

If x is the solution to the equation above, what is the value of $x - 3$?

A) $\frac{23}{2}$

B) $\frac{17}{2}$

C) $\frac{15}{2}$

D) $-\frac{15}{2}$

#2
ID: aa85b138

$2n + 6 = 14$

A tree had a height of 6 feet when it was planted. The equation above can be used to find how many years n it took the tree to reach a height of 14 feet. Which of the following is the best interpretation of the number 2 in this context?

A) The number of years it took the tree to double its height

B) The average number of feet that the tree grew per year

C) The height, in feet, of the tree when the tree was 1 year old

D) The average number of years it takes similar trees to grow 14 feet

#3
ID: 15daa8d6

$2x + 16 = a(x + 8)$

In the given equation, a is a constant. If the equation has infinitely many solutions, what is the value of a?

#4
ID: 12ee1edc

$(b - 2)x = 8$

In the given equation, b is a constant. If the equation has no solution, what is the value of b ?

A) 2

B) 4

C) 6

D) 10

#5
ID: 70e29454

$$a(3-x) - b = -1 - 2x$$

In the equation above, a and b are constants. If the equation has infinitely many solutions, what are the values of a and b ?

A) $a = 2$ and $b = 1$

B) $a = 2$ and $b = 7$

C) $a = -2$ and $b = 5$

D) $a = -2$ and $b = -5$

#6
ID: f09097b1

An agricultural scientist studying the growth of corn plants recorded the height of a corn plant at the beginning of a study and the height of the plant each day for the next 12 days. The scientist found that the height of the plant increased by an average of 1.20 centimeters per day for the 12 days. If the height of the plant on the last day of the study was 36.8 centimeters, what was the height, in centimeters, of the corn plant at the beginning of the study?

#7
ID: 79cf8505

A line segment that has a length of 115 centimeters (cm) is divided into three parts. One part is 47 cm long. The other two parts have lengths that are equal to each other. What is the length, in cm, of one of the other two parts of equal length?

#8
ID: 620abf36

If $5(x + 4) = 4(x + 4) + 29$, what is the value of $x + 4$?

A) -4

B) 25

C) 29

D) 33

#9
ID: 4f669597

$$2(p + 1) + 8(p - 1) = 5p$$

What value of p is the solution of the equation above?

#10 ID: ce314070

If $4x - \frac{1}{2} = -5$, what is the value of $8x - 1$?

A) 2

B) $-\frac{9}{8}$

C) $-\frac{5}{2}$

D) -10

#11 ID: ce6b52d8

If $2(3t - 10) + t = 40 + 4t$, what is the value of $3t$?

#12 ID: 36ab4122

Megan's regular wage at her job is *p* dollars per hour for the first 8 hours of work in a day plus 1.5 times her regular hourly wage for work in excess of 8 hours that day. On a given day, Megan worked for 10 hours, and her total earnings for that day were $137.50. What is Megan's regular hourly wage?

A) $11.75

B) $12.50

C) $13.25

D) $13.75

#13 ID: 5a7ab8e8

$$66x = 66x$$

How many solutions does the given equation have?

A) Exactly one

B) Exactly two

C) Infinitely many

D) Zero

#14 ID: 40049d49

$$4x + 12 = \frac{a(x + 3)}{2}$$

In the given equation, a is a constant. If the equation has infinitely many solutions, what is the value of a?

A) 0

B) 3

C) 8

D) 12

#15

ID: 5ad9eff0

The width of a rectangular dance floor is w feet. The length of the floor is 6 feet longer than its width. Which of the following expresses the perimeter, in feet, of the dance floor in terms of w ?

A) $2w + 6$

B) $4w + 12$

C) $w^2 + 6$

D) $w^2 + 6w$

#16

ID: 45bba652

If $2(x - 5) + 3(x - 5) = 10$, what is the value of $x - 5$?

A) 2

B) 5

C) 7

D) 12

#17

ID: eafdbbbd

$$\tfrac{1}{4}(x + 5) - \tfrac{1}{3}(x + 5) = -7$$

What value of x is the solution to the given equation?

A) -12

B) -5

C) 79

D) 204

#18

ID: 8c515062

A candle is made of 17 ounces of wax. When the candle is burning, the amount of wax in the candle decreases by 1 ounce every 4 hours. If 6 ounces of wax remain in this candle, for how many hours has it been burning?

A) 3

B) 6

C) 24

D) 44