#1

ID: c9fb15ad

Species of tree	Growth factor
Red maple	4.5
River birch	3.5
Cottonwood	2.0
Black walnut	4.5
White birch	5.0
American elm	4.0
Pin oak	3.0
Shagbark hickory	7.5

One method of calculating the approximate age, in years, of a tree of a particular species is to multiply the diameter of the tree, in inches, by a constant called the growth factor for that species. The table above gives the growth factors for eight species of trees. If a white birch tree and a pin oak tree each now have a diameter of 1 foot, which of the following will be closest to the difference, in inches, of their diameters 10 years from now? (1 foot = 12 inches)

A) 1.0

B) 1.2

C) 1.3

D) 1.4

#2

ID: 69f6717f

A sample of oak has a density of 807 kilograms per cubic meter. The sample is in the shape of a cube, where each edge has a length of 0.90 meters. To the nearest whole number, what is the mass, in kilograms, of this sample?

A) 588

B) 726

C) 897

D) $1{,}107$

#3

ID: 3638f413

Jeremy deposited x dollars in his investment account on January 1, 2001. The amount of money in the account doubled each year until Jeremy had 480 dollars in his investment account on January 1, 2005. What is the value of x ?

#4

ID: 3f775bbf

State	Power capacity			
	Low	Medium	High	Total
Texas	4	2	3	9
California	1	0	1	2
Oregon	1	0	1	2
Indiana	0	2	0	2
Colorado	1	1	0	2
Iowa	2	0	0	2
Oklahoma	1	0	0	1
Total	10	5	5	20

The table shows the distribution, by location and power capacity (maximum rate of power generation) of the twenty largest wind projects in the United States in 2013. The total power capacity of the nine wind projects located in Texas was 4,952 megawatts (MW), and the total power capacity of the twenty wind projects was 11,037 MW in 2013. The amount of energy produced in one hour at a rate of one megawatt is one megawatt-hour. If each of the nine Texas wind projects in 2013 had operated continuously for 24 hours at the maximum rate of power generation, approximately how many megawatt-hours of energy would the nine projects have produced?

A) 200

B) 5,000

C) 11,000

D) 120,000

#5

ID: 8637294f

If $\frac{4a}{b} = 6.7$ and $\frac{a}{bn} = 26.8$, what is the value of n?

#6

ID: 7d721177

The density of a certain type of wood is 353 kilograms per cubic meter. A sample of this type of wood is in the shape of a cube and has a mass of 345 kilograms. To the nearest hundredth of a meter, what is the length of one edge of this sample?

A) 0.98

B) 0.99

C) 1.01

D) 1.02

#7

ID: c7c6445f

A certain town has an area of 4.36 square miles. What is the area, in square yards, of this town? (1 mile $= 1{,}760$ yards)

A) 404

B) $7{,}674$

C) $710{,}459$

D) $13{,}505{,}536$

#8 ID: 5154615f

To study fluctuations in composition, samples of pumice were taken from 29 locations and cut in the shape of a cube. The length of the edge of one of these cubes is 3.000 centimeters. This cube has a density of 0.230 grams per cubic centimeter. What is the mass of this cube, in grams?

#9 ID: 50b99b2d

Objects R and S each travel at a constant speed. The speed of object R is half the speed of object S. Object R travels a distance of $4x$ inches in y seconds. Which expression represents the time, in seconds, it takes object S to travel a distance of $24x$ inches?

A) $12y$

B) $3y$

C) $16y$

D) $6y$

#10 ID: c2e7fa6d

For an electric field passing through a flat surface perpendicular to it, the electric flux of the electric field through the surface is the product of the electric field's strength and the area of the surface. A certain flat surface consists of two adjacent squares, where the side length, in meters, of the larger square is 3 times the side length, in meters, of the smaller square. An electric field with strength 29.00 volts per meter passes uniformly through this surface, which is perpendicular to the electric field. If the total electric flux of the electric field through this surface is $4{,}640$ $\text{volts} \cdot \text{meters}$, what is the electric flux, in $\text{volts} \cdot \text{meters}$, of the electric field through the larger square?

#11 ID: 20b69297

Anita created a batch of green paint by mixing 2 ounces of blue paint with 3 ounces of yellow paint. She must mix a second batch using the same ratio of blue and yellow paint as the first batch. If she uses 5 ounces of blue paint for the second batch, how much yellow paint should Anita use?

A) Exactly 5 ounces

B) 3 ounces more than the amount of yellow paint used in the first batch

C) 1.5 times the amount of yellow paint used in the first batch

D) 1.5 times the amount of blue paint used in the second batch

#12 ID: d6456c7a

A certain park has an area of 11,863,808 square yards. What is the area, in square miles, of this park? (1 mile = 1,760 yards)

A) 1.96

B) 3.83

C) 3,444.39

D) 6,740.8