

1

1

Salim wants to purchase tickets from a vendor to watch a tennis match. The vendor charges a one-time service fee for processing the purchase of the tickets. The equation $T = 15n + 12$ represents the total amount T , in dollars, Salim will pay for n tickets. What does 12 represent in the equation?

A) The price of one ticket, in dollars
 B) The amount of the service fee, in dollars
 C) The total amount, in dollars, Salim will pay for one ticket
 D) The total amount, in dollars, Salim will pay for any number of tickets

2

1

$x + y = 75$

The equation above relates the number of minutes, x , Maria spends running each day and the number of minutes, y , she spends biking each day. In the equation, what does the number 75 represent?

A) The number of minutes spent running each day
 B) The number of minutes spent biking each day
 C) The total number of minutes spent running and biking each day
 D) The number of minutes spent biking for each minute spent running

3

2

The average number of students per classroom, y , at Central High School can be estimated using the equation $y = 0.8636x + 27.227$, where x represents the number of years since 2004 and $x \leq 10$. Which of the following statements is the best interpretation of the number 0.8636 in the context of this problem?

A) The estimated average number of students per classroom in 2004
 B) The estimated average number of students per classroom in 2014
 C) The estimated yearly decrease in the average number of students per classroom
 D) The estimated yearly increase in the average number of students per classroom

4

2

The amount of energy used by a light, in kilowatt-hours, is calculated by multiplying the number of kilowatts of the light's bulb by the number of hours the light is on. The expression $0.075x + 0.060y$ represents the total amount of energy used by two different lights, A and B, where x is the number of hours Light A is on and y is the number of hours Light B is on. What does 0.075 represent in the expression?

A) Light A has a 0.075 kilowatt bulb in it.
 B) Light A has a 75 kilowatt bulb in it.
 C) Light B has a 0.075 kilowatt bulb in it.
 D) Light B has a 75 kilowatt bulb in it.

5

2

Eli saves money each month to buy a new computer. The total amount he has saved, T , can be calculated by the equation $T = 83 + 30m$, where m is the number of months since he started saving. What does the number 83 represent in the equation?

A) The amount of money Eli started with
 B) The number of months Eli has been saving
 C) The amount of money Eli saves each month
 D) The total amount of money Eli wants to save

6

3

A landscaping company estimates the price of a job, in dollars, using the expression $60 + 12nh$, where n is the number of landscapers who will be working and h is the total number of hours the job will take using n landscapers. Which of the following is the best interpretation of the number 12 in the expression?

A) The company charges \$12 per hour for each landscaper.
 B) A minimum of 12 landscapers will work on each job.
 C) The price of every job increases by \$12 every hour.
 D) Each landscaper works 12 hours a day.

7

4

A) The contractor's hourly rate
B) The contractor's onetime fee
C) The total amount that the contractor charges
D) The maximum amount that the contractor charges

The graph represents the total charges, in dollars, by a contractor for x hours of work. The contractor charges a onetime fee plus an hourly rate. What is the best interpretation of the slope of the graph?

8

4

Kathy is a repair technician for a phone company. Each week, she receives a batch of phones that need repairs. The number of phones that she has left to fix at the end of each day can be estimated with the equation $P = 108 - 23d$, where P is the number of phones left and d is the number of days she has worked that week. What is the meaning of the value 108 in this equation?

A) Kathy will complete the repairs within 108 days.
B) Kathy starts each week with 108 phones to fix.
C) Kathy repairs phones at a rate of 108 per hour.
D) Kathy repairs phones at a rate of 108 per day.

9

6

$$h = 3a + 28.6$$

A pediatrician uses the model above to estimate the height h of a boy, in inches, in terms of the boy's age a , in years, between the ages of 2 and 5. Based on the model, what is the estimated increase, in inches, of a boy's height each year?

A) 3
B) 5.7
C) 9.5
D) 14.3

10

6

The equation $y = 36 + 18x$ models the relationship between the height y , in inches, of a typical golden delicious apple tree and the number of years, x , after it was planted. If the equation is graphed in the xy -plane, what is indicated by the y -intercept of the graph?

A) The age, in years, of a typical apple tree when it is planted
B) The height, in inches, of a typical apple tree when it is planted
C) The number of years it takes a typical apple tree to grow
D) The number of inches a typical apple tree grows each year

11

7

$$g(x) = -0.038x + 2.136$$

The given linear function g models the annual percentage increase in the population of India x years after 1990. What is the best interpretation of $g(20) = 1.376$ in this context?

A) 1.376 years after 1990, the percentage increase in the population of India was 20% over the previous year.
B) 1.376 years after 1990, India's population was approximately 20 times its population in 1990
C) 20 years after 1990, the percentage increase in the population of India was 1.376% over the previous year.
D) 20 years after 1990, India's population was approximately 1.376 times its population in 1990.

12

7

A research institute conducted phone and mail surveys. The total cost of conducting these surveys was \$5,000. The line shown models the possible combinations of phone and mail surveys that the institute could have conducted.

According to the model, what was the cost for each phone survey conducted?

A) \$200
B) \$125
C) \$40
D) \$25

- | | | |
|------------|------------|-------------|
| <u>1 B</u> | <u>5 A</u> | <u>9 A</u> |
| <u>2 C</u> | <u>6 A</u> | <u>10 B</u> |
| <u>3 D</u> | <u>7 A</u> | <u>11 C</u> |
| <u>4 A</u> | <u>8 B</u> | <u>12 C</u> |