

Equations

- 26 The approximate distance in miles between Los Angeles and a commercial jet flying from Boston to Los Angeles can be found using the function $m = -475t + 2,650$, where t is the number of hours the jet has been flying. Which number of hours and minutes is closest to the amount of time that the jet has been flying if the jet is 1,500 miles from Los Angeles?

F 2 hours and 25 minutes

G 8 hours and 44 minutes

H 3 hours and 16 minutes

J 9 hours and 13 minutes

- 27 The total cost of renting a banquet hall is a function of the number of hours the hall is rented. The owner of the banquet hall charges \$85 per half hour up to a maximum of 4 hours plus a \$50 cleaning fee. What is the greatest value in the range for this situation?

Record your answer and fill in the bubbles on your answer document.

Equations

- 49 Which set of ordered pairs contains only points that are on the graph of the function $y = 12 - 3x$?
- A $\{(-3, -27), (0, 0), (6, 54)\}$
 - B $\{(-18, 10), (-6, 6), (18, -2)\}$
 - C $\{(-5, 27), (-1, 15), (8, -12)\}$
 - D $\{(-7, -9), (-4, 0), (2, 18)\}$
- 30 What is the equation in standard form of the line that passes through the point $(1, 24)$ and has a slope of -0.6 ?
- F $3x + 5y = 125$
 - G $3x + 5y = 77$
 - H $3x + 5y = 123$
 - J $3x + 5y = 115$

Equations

29 A store manager begins each shift with the same total amount of money. She keeps \$200 in a safe and distributes the rest equally to the 5 cashiers in the store. This situation can be represented by the function $y = \frac{(x - 200)}{5}$. What does the variable x represent in this situation?

- A The total amount of money the manager has at the beginning of a shift
- B The total amount of money the manager has at the end of a shift
- C The amount of money each cashier has at the beginning of a shift
- D The amount of money each cashier has at the end of a shift

14 Students at a school will sell hats to raise money. There are some hats left over from last year, and 20 boxes of hats will be ordered this year. When the order arrives, the total number of hats the students will have can be determined using the function $f(x) = 48x + 37$, where x represents the number of boxes ordered. If the number of hats per box changes so that the situation is modeled by the function $h(x) = 24x + 37$, then how many fewer hats will the students have available to sell if they still order 20 boxes?

Record your answer and fill in the bubbles on your answer document.

Equations

- 26 The average blue whale gains weight at a constant rate each day during its first six months of life. The relationship between the average blue whale's weight in tons, w , and its age in days, d , for the first six months of its life can be modeled by the function $w = 0.1d + 3$. Based on this relationship, which statement is not true for the average blue whale?
- F The average blue whale weighs 3 tons at birth.
 - G When the average blue whale is 5 days old, it weighs 20 tons.
 - H The average blue whale gains 0.1 ton per day during its first six months of life.
 - J When the average blue whale weighs 18 tons, it is 150 days old.
- 28 A customer pays an annual membership fee of \$85 to a neighborhood car wash. Each time he takes his car to the car wash, he pays only \$7. The total amount of money he spends at the car wash in one year in dollars can be found using the function $y = 7x + 85$. What does the variable x represent in this function?
- F The total amount of money the customer spends each month at the car wash
 - G The number of months the customer has been a member at the car wash
 - H The number of times the customer takes his car to the car wash in one year
 - J The cost each time the customer takes his car to the car wash

Equations

- 23 The sophomore class needs a combined total of 216 medium and large T-shirts for field day. The number of medium T-shirts needed is three times the number of large T-shirts needed. Based on this information, would it be reasonable for the sophomore class to order 72 large T-shirts and 144 medium T-shirts?
- A No, because the number of medium T-shirts is not 3 times the number of large T-shirts
 - B No, because the number of large T-shirts is not 3 times the number of medium T-shirts
 - C Yes, because the total number of T-shirts is 216
 - D Yes, because the number of large T-shirts is $\frac{1}{3}$ of the total number of T-shirts
- 37 The average annual rainfall for a particular city is 33.2 inches. In the first 30 weeks of this year, the city received a total of 9.7 inches of rain. If it is expected to rain between 1.5 and 2.1 inches per week through the end of the year, what is a reasonable number of additional weeks needed for this city to reach its average annual rainfall?
- A 23 weeks
 - B 13 weeks
 - C 9 weeks
 - D 16 weeks

Equations

- 45 An architect is designing an office building with n floors that will have an FM radio antenna 15.85 m tall on its roof. Each floor of the building will be 3.9 m high. Which function can be used to find the total height of the building in meters, including the FM antenna?
- A $h(n) = 15.85n + 3.9$
- B $h(n) = 3.9n + 15.85$
- C $h(n) = 3.9n - 15.85$
- D $h(n) = 19.75n$
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- 16 A painter charges \$35 per hour for labor plus \$40 for a ladder rental when he paints a house. The customer provides the paint. The total charge to paint a customer's house was \$950. How many hours did the painter spend painting this house?
- F $12\frac{2}{3}$ h
- G 28 h
- H 23 h
- J Not here

Equations

41 What is the zero of $r(x) = \frac{8}{3}x - 16$?

A -16

B -6

C 6

D 16

52 If $y = -\frac{4}{5}x - 2$, what is the value of x when $y = -9$?

F $-\frac{35}{4}$

G $-\frac{55}{4}$

H $\frac{35}{4}$

J $\frac{55}{4}$

Equations

- 12 The length, in feet, of a small train at an amusement park can be modeled by the function $f(c) = 9c + 14$, where c is the number of passenger cars attached to the locomotive. The original passenger cars were replaced, and the length of the train is now modeled by the function $h(c) = 12c + 14$. Based on this information, which statement describes the change in this situation?
- F The locomotive is now 9 feet long, and the length of each passenger car remained the same.
 - G The locomotive is now 12 feet long, and the length of each passenger car remained the same.
 - H Each passenger car is now 9 feet long, and the length of the locomotive remained the same.
 - J Each passenger car is now 12 feet long, and the length of the locomotive remained the same.
- 53 The cost of staying at a hotel can be found using the function $y = 129x + 9.95$, where x is the number of days a guest stays at the hotel and y is the cost in dollars. The cost includes a flat fee for Internet access. If the fee for Internet access is not included, which statement is true?
- A The cost is \$9.95 less per day.
 - B The cost is \$9.95 less.
 - C The cost is \$9.95 more per day.
 - D The cost is \$9.95 more.