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A chef trimmed fat off a steak and was left with a steak weighing 8.80 ounces. If the weight of the fat was equal to 12 percent of the original weight, what was the original weight, in ounces, of the steak?

- A) 8.92
- B) 9.20
- C) 10.00
- D) 11.20

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A backpacker is packing survival rations that consist of granola bars and packets of peanut butter. A granola bar has 470 food calories, and a packet of peanut butter has 90 food calories. The backpacker makes the survival rations using a total of 10 granola bars and packets of peanut butter combined, and the granola bars and packets of peanut butter have a total of 1,660 food calories. Which of the following systems of equations can be used to determine the number of granola bars, g , and packets of peanut butter, p , that are in the survival rations?

- A) $280(g + p) = 1,660$
 $g - p = 10$
- B) $90g + 470p = 1,660$
 $g - p = 10$
- C) $90g + 470p = 1,660$
 $g = 10 - p$
- D) $470g + 90p = 1,660$
 $g = 10 - p$

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Ten floorboards with equal widths laid down side-to-side cover a width of approximately $7\frac{3}{4}$ feet. At this rate, which of the following is the closest to the number of boards laid side-to-side needed to cover a width of 32 feet?

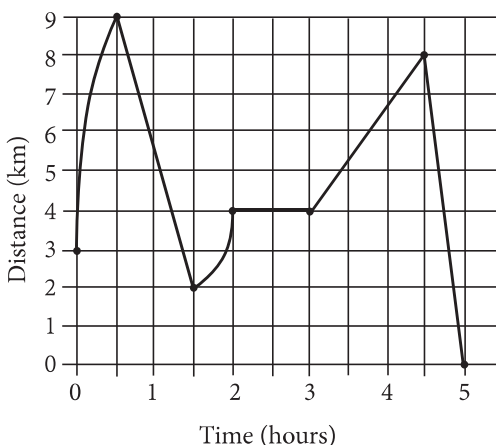
- A) 15
- B) 20
- C) 30
- D) 40

CONTINUE



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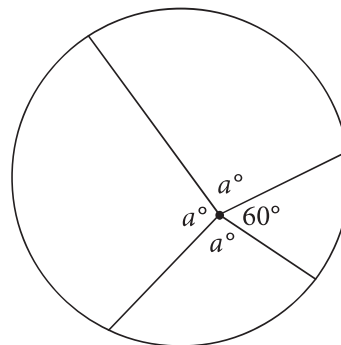
George's Distance from
Home over Time



George recorded his distance from home over a five-hour period; his distance and time are shown in the graph above. According to the graph, which of the following is NOT true about the five-hour period?

- A) George's distance from home increased at a constant rate during the first hour of the five-hour period.
- B) George's distance from home reached its maximum during the first hour.
- C) George remained a constant distance from his home for one hour.
- D) George was moving further from his home for a longer period of time than he was moving closer to his home.

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In the figure above, what is the value of a ?

- A) 40
- B) 60
- C) 100
- D) 130

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$$y = -75x + 5,000$$

The equation above models the amount of money y , in dollars, remaining in Bo's bank account x days after the start of the fall semester. The amount of money in Bo's bank account is based on the money he earned over the summer and how much he spends per day during the fall semester. When the equation is graphed in the xy -plane, what does the slope of the graph represent in terms of the model?

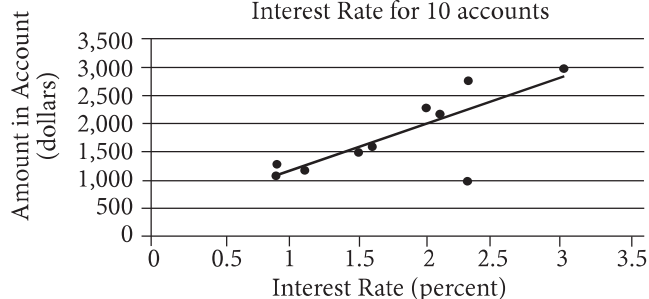
- A) The total amount in Bo's bank account
- B) Daily spending of \$5,000
- C) Daily spending of \$75
- D) The amount of money Bo earned over the summer

CONTINUE



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Amount in Account and
Interest Rate for 10 accounts



The scatterplot above shows data for ten accounts opened by a company, along with the line of best fit. For the account that contains the least amount of money, which of the following is closest to the difference of the actual amount and the amount predicted by the line of best fit?

- A) \$200
- B) \$500
- C) \$900
- D) \$1,200

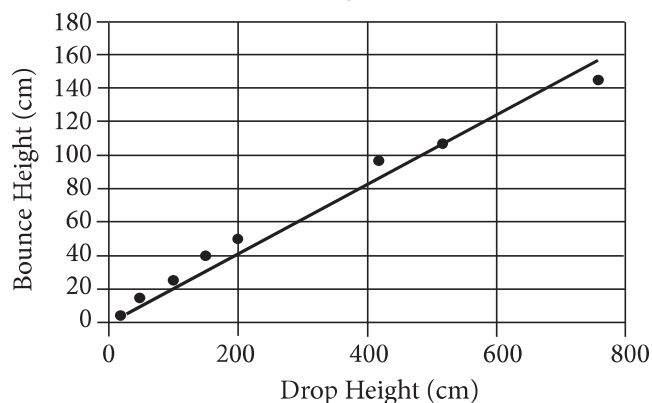
18

If $\frac{x}{3} = 4$ and $x + y = 32$, what is the value of $x - y$?

- A) -24
- B) -8
- C) 12
- D) 32

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Drop Height and Bounce Height
for Eight Balls



The scatterplot above shows the height in centimeters for both the drop and bounce of eight different balls of the same type. The line of best fit for the data is also shown. According to the line of best fit, which of the following is closest to the predicted increase in bounce height, in centimeters, for every increase of 100 centimeters in drop height?

- A) 25
- B) 20
- C) 15
- D) 10

CONTINUE



Questions 20 and 21 refer to the following information.

Formula A: $BMI = \frac{w}{h^2}$

Formula B: $BMI = \frac{4w - 100}{5}$

The formulas above are used in nutrition to estimate the body mass index BMI , in kilograms per square meter, of adults whose weight w ranges between 50 and 100 kilograms and whose height h is measured in meters.

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Based on Formula B, what is w in terms of BMI ?

- A) $w = 5BMI + 25$
- B) $w = 5BMI - 25$
- C) $w = \frac{5BMI + 100}{4}$
- D) $w = \frac{5BMI - 100}{4}$

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If both Formulas A and B give the same estimate for BMI , which of the following expressions is equivalent to $4w - 100$?

- A) $\frac{w}{h^2}$
- B) $\frac{5w}{h^2}$
- C) $\frac{5w}{4h^2}$
- D) $\frac{5w + 100}{4h^2}$

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The number of bacteria colonies h hours after the beginning of an experiment is given by the function $C(h) = 3^h - 2h + 20$. What does the number 20 represent in the function?

- A) The final rate of growth, in colonies per hour
- B) The initial rate of growth, in colonies per hour
- C) One less than the initial number of bacteria colonies
- D) One more than the final number of bacteria colonies

CONTINUE