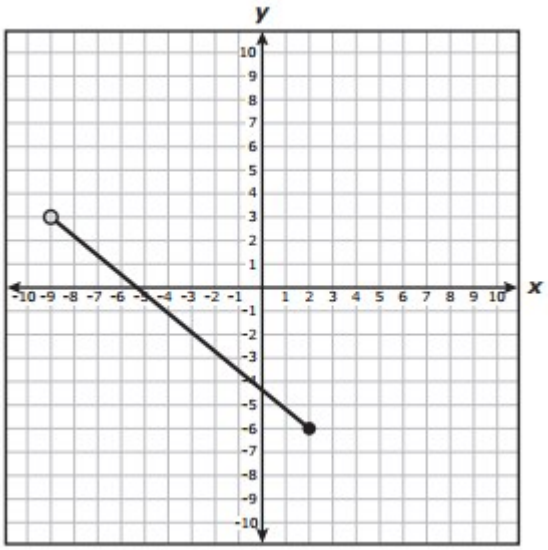
Domain and Range of a Linear Function

GO ON

1 The graph of part of linear function g is shown on the grid.



Which inequality best represents the domain of the part shown?

A $-9 < x \leq 2$

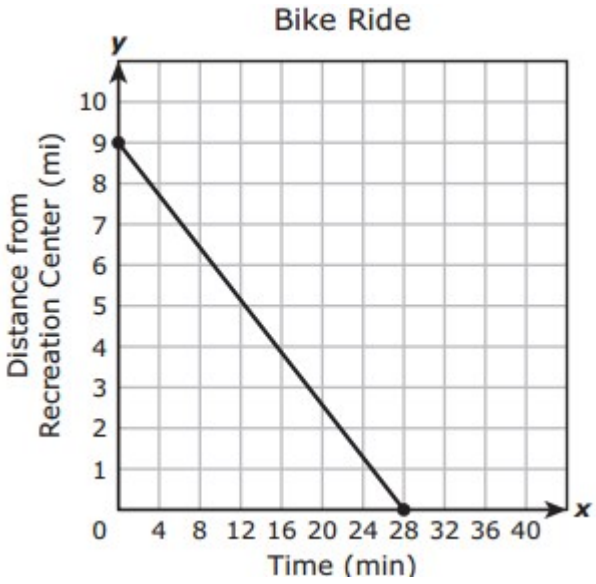
B $-9 \leq x < 2$

C $-6 < g(x) \leq 3$

D $-6 \leq g(x) < 3$

GO ON

2 A student rode a bike from school to a recreation center. The graph shows the student's distance in miles from the recreation center after riding the bike for x minutes.



What is the range of the function for this situation?

A All real numbers greater than or equal to 0 and less than or equal to 28

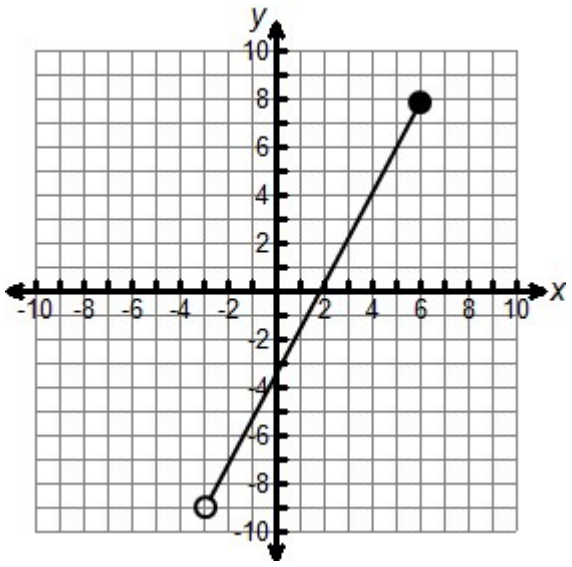
B All real numbers greater than or equal to 0 and less than or equal to 9

C All real numbers less than or equal to 28

D All real numbers less than or equal to 9

GO ON

3 The graph of a function is shown below.



What is the range of the function?

A $-3 < y \leq 6$

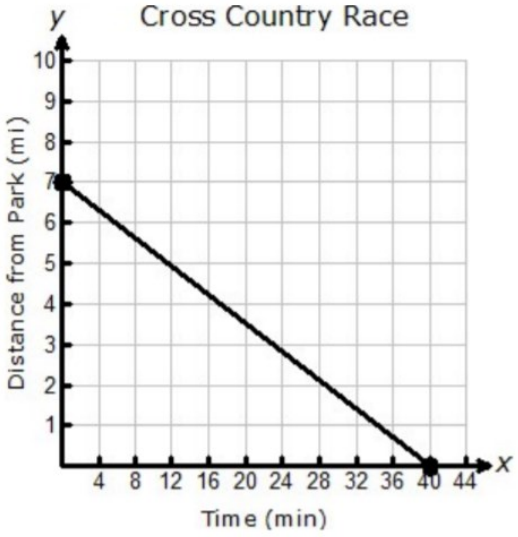
B $-9 \leq y < 8$

C $y \in \Re$

D $-9 < y \leq 8$

GO ON

4 A student ran a cross country race from school to a local park. The graph shows the student's distance in miles from the park after running for x minutes.



What is the domain of the function for this situation?

A All real numbers less than or equal to 40

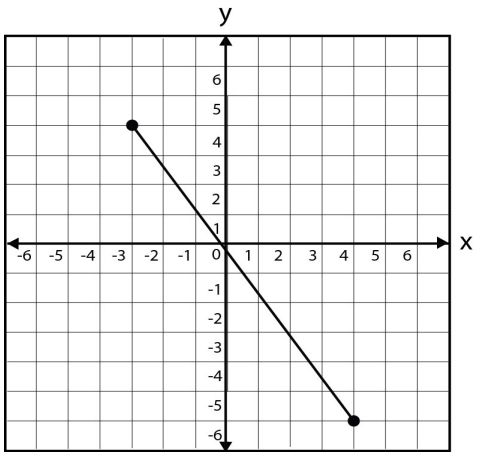
B All real numbers less than or equal to 7

C All real numbers greater than or equal to 0 and less than or equal to 40

D All real numbers greater than or equal to 0 and less than or equal to 7

GO ON

5 What is the domain of this graph?



A $\{x \mid -3 \leq x \leq 4\}$

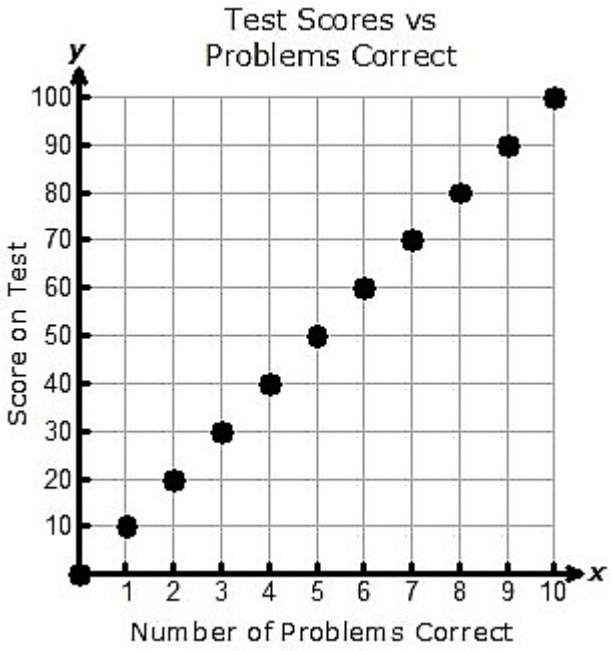
B $\{x \mid -6 \leq x \leq 4\}$

C $\{x \mid \frac{-3}{4} \leq x \leq \frac{2}{-3}\}$

D $\{x \mid -6 \leq x \leq -3\}$

GO ON

6 Mr. Freeman gave his students a 10-problem, multiple choice quiz over equations. In grading the test, he gave students ten points for each correct answer with no partial credit. The graph below represents the score students could make as a function of the number of questions they answered correctly on the quiz.



What is the domain of the function, and is the function continuous or discrete?

A {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10}, discrete

B {0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100}, discrete

C $0 \leq x \leq 100$, continuous

D $0 \leq x \leq 10$, continuous

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7 A function is represented by the set of ordered pairs shown below.

{(-4, 3), (-1, 3), (0, 3), (1, 5), (3, 7)}

What is the range of this function?

A {7}

B {4}

C {3, 5, 7}

D {–4, –1, 0, 1, 3}

8 What is the range of the function $y = 5 - 2x$ when the domain is {0, 1, 2, 3}?

A {5, 6, 7, 8}

B {5, 3, 1, -1}

C {5, 7, 9, 11}

D {-5, -3, -1, 1}

GO ON

9 What is the range of the function $f(x) = -2x + 5$ when the domain is {-5, 5}.

A {–5, 5}

B {–15, –5}

C {5, 15}

D {–5, 15}

10 What is the domain of the function $y = 3x - 4$ when the range is {–7, 2, 8, 14}?

A {–1, 0, 1, 2}

B {–1, 2, 4, 6}

C {–25, –29, –33, –37}

D {17, 21, 25, 29}

GO ON

11 The total cost in dollars to buy uniforms for the players on a volleyball team can be found using the function c = 34.95u + 6.25, where u is the number of uniforms bought. If there are at least 8 players but not more than 12 players on the volleyball team, what is the domain of the function for this situation?

A $0 < u \leq 12$

B $0 < c \leq 425.65$

C {8, 9, 10, 11, 12}

D {285.85, 320.80, 355.75, 390.70, 425.65}

12 The total cost in dollars to buy calculator sets for the students in Mr. Engle's math class can be found using the function $c = 75.95s + 12.25$, where s is the number of calculators purchased. If there are at least 27 students but not more than 31 students in Mr. Engle's math class, what is the range of the function for this situation?

A $0 < s \leq 31$

B $0 < c \leq 2366.70$

C {27, 28, 29, 30, 31}

D {2062.90, 2138.85, 2214.80, 2290.75, 2366.70}

13 The total cost, y, for Leah and x friends to go to an amusement park can be modeled by a linear function. The amusement park charges an entrance fee of $45.25 per person and a parking fee of $10 per car. Leah's car has seating for a maximum of 6 people.

What is the range of the function for this situation?

A {1, 2, 3, 4, 5, 6}

B {55.25, 100.50, 145.75, 191.00, 236.25, 281.50}

C $55.25 \leq y \leq 281.50$

D $1 \leq x \leq 6$

GO ON

14 The total cost for ordering DVDs online can be computed using the formula below where $C(x)$ represents the total cost and x represents the number of DVDs ordered.

$$C(x) = 6.75 + 19.95x$$

Which inequalities can best be used to represent the domain and range of the problem situation?

A Domain: $x \geq 1$, $x \in Z$
Range: $C(x) \geq \$26.70$, where $C(x) = 6.75 + \$19.95x$

B Domain: $x \geq 0$, $x \in Z$
Range: $C(x) \geq \$6.75$, where $C(x) = 6.75 + \$19.95x$

C Domain: $x \geq 1$
Range: $C(x) \geq \$26.70$

D Domain: $x \geq \$26.70$, where x is in increments of \$19.95
Range: $C(x) \geq 1$, $C(x) \in Z$

15 The total cost for funding a trip for the senior class to go to the fall fair, $C(x)$, is a function of the number of students that will make the trip, x. This relationship can be expressed by the function below. The trip will not be taken until at least 5 students sign up to go.

$$C(x) = 350 + 7.50x$$

Which inequalities can best be used to represent the domain and range of the problem situation?

A Domain: $x \geq 5$, $x \in Z$
Range: $C(x) \geq \$387.50$, where $C(x) = 350 + \$7.50x$

B Domain: $x \geq 0$, $x \in Z$
Range: $C(x) \geq \$350$, where $C(x) = 350 + \$7.50x$

C Domain: $x \geq 5$
Range: $C(x) \geq \$387.50$

D Domain: $x \geq \$387.50$, where x is in increments of \$7.50
Range: $C(x) \geq 5$, $C(x) \in Z$

GO ON

16 A lake in East Texas was stocked with 3,000 trout in the year 2000. The number of fish in the lake is modeled by f(x) = 3000 + 100x, where x represents the number of years after 2000. Which of the following is the most reasonable domain and range for the function?

A $x \geq 0, y \geq -3000$

B $x \geq 0, y \geq 0$

C $x \in R, y \in R$

D $x \geq 0, y \geq 3000$

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS ON YOUR ANSWER DOCUMENT

STOP