

Name _____

1 If $f(x) = |x - 3| + 7$, then which of the following is the value of $f(1)$?

- (1) 11 (3) 9
 (2) 13 (4) 17

2 In order to convert 3.6 meters into yards, Evin used the following product:

$$3.6 \text{ meters} \times \frac{100 \text{ centimeters}}{1 \text{ meter}} \times \frac{2.54 \text{ centimeters}}{1 \text{ inch}} \times \frac{1 \text{ foot}}{12 \text{ inches}} \times \frac{1 \text{ yard}}{3 \text{ feet}}$$

Which of the following ratios is incorrectly written?

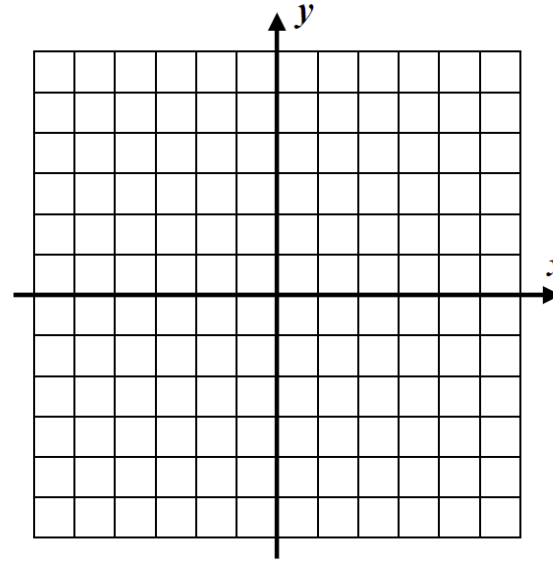
- (1) $\frac{100 \text{ centimeters}}{1 \text{ meter}}$ (3) $\frac{1 \text{ foot}}{12 \text{ inches}}$
 (2) $\frac{2.54 \text{ centimeters}}{1 \text{ inch}}$ (4) $\frac{1 \text{ yard}}{3 \text{ feet}}$

3 Write the equation of the line, in $y = mx + b$ form, that passes through the points $(-2, -15)$ and $(5, 13)$. Show how you arrived at the values of m and b .

4 Which of the following is an irrational number?

- (1) -5 (3) $\sqrt{10}$
 (2) $\sqrt{\frac{4}{9}}$ (4) $\frac{8}{3}$

5 Graph each of the following lines on the grid below. Label each with its equations.



$y = x - 2$

$2y + 3x = 4$

$y = -4$

$x = -2$

6 Which of the following is the solution set to the equation:
 $(x + 2)^2 = 25$

- (1) $\{-2, 5\}$ (3) $\{-3, 3\}$
 (2) $\{-7, 3\}$ (4) $\{-5, 5\}$

7 Over which of the following intervals is the function $f(x) = |x - 3| - 2$ always increasing?

- (1) $x < -3$ (2) $x > 3$ (3) $x > -2$ (4) $x < 2$

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8 Which of the following represents the solutions to the equation $x^2 + 6x + 4 = 0$?

- (1) $x = -4$ and 6 (3) $x = -3 \pm \sqrt{5}$
 (2) $x = -3 \pm \sqrt{10}$ (4) $x = -3 \pm 2\sqrt{5}$

9 Graph the function $f(x) = \sqrt{x+3} - 1$ on the grid below. Show the table that you created by hand or using your calculator. Then, state its domain and range.

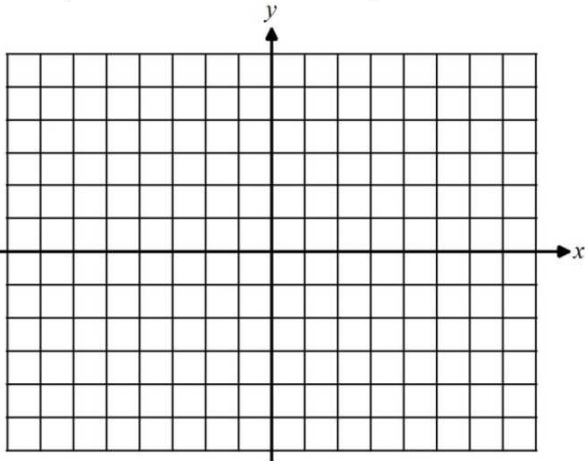


Table:

Domain:

Range:

10 Which of the polynomials results from squaring the binomial $x - 4$?

- (1) $x^2 + 16$ (3) $x^2 - 8x - 16$
 (2) $x^2 - 16$ (4) $x^2 - 8x + 16$

11 Which of the following is *not* a factor of the binomial $7x^2 - 28x$?

- (1) $x - 4$ (3) 7

12 (2) x (4) -4

Which of the following scenarios describes a discrete function?

- (1) The distance an object falls as a function of the time it has been falling.
 (2) The height of a mountain as a function of the location along a road.
 (3) The wait time for a park ride as a function of the number of people standing in line.
 (4) The volume of water in a pool as a function of the time it has been draining.

13 Franco starts with \$1.50 in his cash box and sells snow cones for 50 cents each. Which of the following graphs shows the amount of money in his box as a function of the number of snow cones he's sold?

