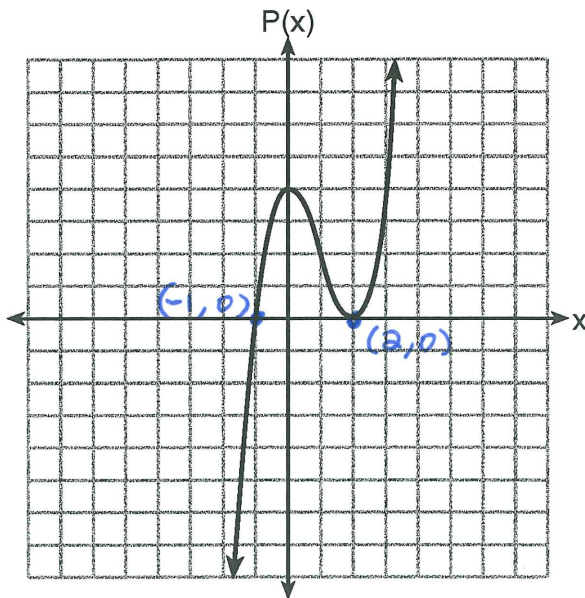


Use this space for computations.

7 Wenona sketched the polynomial $P(x)$ as shown on the axes below.



Use calculator to check which answer choice matches the graph.

$y_1 =$ _____

Graph

Which equation could represent $P(x)$?

- (1) $P(x) = (x + 1)(x - 2)^2$ (3) $P(x) = (x + 1)(x - 2)$ ↻
 (2) $P(x) = (x - 1)(x + 2)^2$ (4) $P(x) = (x - 1)(x + 2)$ ↻

→ means cause and effect

8 Which situation does not describe a causal relationship?

- (1) The higher the volume on a radio, the louder the sound will be. True
 (2) The faster a student types a research paper, the more pages the research paper will have. FALSE!
 (3) The shorter the time a car remains running, the less gasoline it will use. True
 (4) The slower the pace of a runner, the longer it will take the runner to finish the race. True

→ I type really fast, but it doesn't mean I will have more of my research paper written. It depends on how well I have my paper planned out and thought through!

Use this space for computations.

9 A plumber has a set fee for a house call and charges by the hour for repairs. The total cost of her services can be modeled by $c(t) = 125t + 95$.

Which statements about this function are true?

- I. A house call fee costs \$95. ✓
- II. The plumber charges \$125 per hour. ✓
- III. The number of hours the job takes is represented by t . ✓

- (1) I and II, only
- (2) I and III, only
- (3) II and III, only
- (4) I, II, and III

$$y = \overset{\text{slope}}{\boxed{m}}x + \overset{\text{y-intercept}}{\boxed{b}}$$

$$c(t) = \underset{\substack{\downarrow \\ \text{slope} \\ \text{(rate of change)}}}{\boxed{125}}t + \underset{\substack{\downarrow \\ \text{y-intercept} \\ \text{(one-time fee)}}}{\boxed{95}}$$

↗ time

10 What is the domain of the relation shown below?

↗ x values

$$\{(\overset{x}{\underline{4}}, \overset{y}{\underline{2}}), (\overset{x}{\underline{1}}, \overset{y}{\underline{1}}), (\overset{x}{\underline{0}}, \overset{y}{\underline{0}}), (\overset{x}{\underline{1}}, \overset{y}{\underline{-1}}), (\overset{x}{\underline{4}}, \overset{y}{\underline{-2}})\}$$

- (1) {0, 1, 4}
- (2) {-2, -1, 0, 1, 2}
- (3) {-2, -1, 0, 1, 2, 4}
- (4) {-2, -1, 0, 0, 1, 1, 1, 2, 4, 4}

x-values: 4, 1, 0, 1, 4
(domain)

11 What is the solution to the inequality $2 + \frac{4}{9}x \geq 4 + x$?

- (1) $x \leq -\frac{18}{5}$
- (2) $x \geq -\frac{18}{5}$
- (3) $x \leq \frac{54}{5}$
- (4) $x \geq \frac{54}{5}$

$$\begin{array}{r} 2 + \frac{4}{9}x \geq 4 + x \\ -2 \qquad \qquad \qquad -2 \\ \hline \frac{4}{9}x \geq 2 + x \\ -\frac{4}{9}x \qquad \qquad \qquad -\frac{4}{9}x \\ \hline -\frac{5}{9}x \geq 2 \\ \left(-\frac{5}{9}\right) \qquad \qquad \qquad \left(-\frac{5}{9}\right) \end{array}$$

divide by neg changes symbol!

$$\boxed{x \leq -\frac{18}{5}}$$

12 Konnor wants to burn 250 Calories while exercising for 45 minutes at the gym. On the treadmill, he can burn 6 Cal/min. On the stationary bike, he can burn 5 Cal/min.

If t represents the number of minutes on the treadmill and b represents the number of minutes on the stationary bike, which expression represents the number of Calories that Konnor can burn on the stationary bike?

- (1) b
- (2) $5b$
- (3) $45 - b$
- (4) $250 - 5b$

| | |
|------------------|-------------|
| <u>Treadmill</u> | <u>Bike</u> |
| t | b |
| 6 cal/min | 5 cal/min |
| (6t) | ★ (5b) ★ |