

Cumulative Review

Chapters 1–9

For Questions 1–11, choose the correct letter.

- What are the next three terms in the sequence 6, 12, 24, 48, ...?
 A. 72, 96, 120 B. 86, 162, 240 C. 96, 192, 384 D. 50, 52, 54
- Solve $8y = -100$.
 A. -800 B. -12.5 C. 800 D. 12.5
- Find the equation of the line passing through $(-2, -1)$ and parallel to $y = -3x - 1$.
 A. $y = -3x + 5$ B. $y = -\frac{3x}{2} - 1$ C. $y = \frac{x}{3} + 5$ D. $y = 3x + 1$
- Solve $\begin{cases} 3x + 7y = -2 \\ 4x - 3y = 22 \end{cases}$.
 A. $(-4, -2)$ B. $(-4, 2)$ C. $(4, 2)$ D. $(4, -2)$
- Simplify $\frac{10x^5y^3}{2x^6y}$.
 A. $5xy^2$ B. $\frac{5y^2}{x}$ C. $\frac{5x}{y^2}$ D. $\frac{x}{5y^2}$
- Simplify $(3x - 1)(x + 4)$.
 A. $3x^2 - 4$ B. $3x^2 - 11x - 4$ C. $3x^2 + 11x - 4$ D. $3x^2 + 13x - 4$
- A scuba diver at a depth of 80 ft begins her ascent to the ocean surface. Her rate of change in depth is 2 ft/s. Which equation represents her depth in feet t seconds after she begins her ascent?
 A. $2t - 80$ B. $80 - 2t$ C. $-80 - 2t$ D. $80 + 2t$
- Factor $4x^2 - x - 14$.
 A. $(4x + 7)(x - 2)$ B. $(2x - 7)(2x + 2)$ C. $(4x - 7)(x + 2)$ D. $(2x + 7)(2x - 2)$
- A bowl contains five green olives and eight black ones. Wilma sticks a fork into the bowl and brings out two olives. What is the probability that she gets one green and one black olive?
 A. $\frac{1}{2}$ B. $\frac{10}{39}$ C. $\frac{40}{169}$ D. $\frac{5}{8}$
- Which number is *not* a solution of the compound inequality $7 - 4x \leq 3$ and $-x - 5 > -10$?
 A. 5 B. 4 C. 2 D. 1
- Which of the following is a cubic binomial?
 A. $w^3 - 6w^2 + 9$ B. $7a^3 + 4a^{-2}$ C. $-y^3 + 3y^5$ D. $x^2 - 2x^3$

Cumulative Review (continued)

Chapters 1–9

Gridded Response.

12. A city is growing at a rate of 8 percent per year. What multiplier is used to find the new population each year?
13. Simplify $6^2 \div 4 + 2(7 - 3) \cdot 4$.
14. What is the slope of a line that passes through the origin and the point $(6, 3)$?
15. Evaluate $x^2 + 3y$ for $x = 4$ and $y = 0.5$.
16. A weight of 6 lb stretches a spring a distance of 12 in. Find the constant k for the spring.
17. Solve $\frac{18}{x} = \frac{21}{14}$.
18. Marie has scores of 88, 90, and 80 on three tests. What score must she make on her next test to have a mean score of exactly 85?

Short Response.

19. Find the mean, median, and mode for the following set of numbers:
 $\{1, 2, 3, 4, 5, 5, 6, 5, 4, 3, 10\}$
20. Write an equation in standard form passing through the points $(-2, 0)$ and $(-3, -1)$.
21. The product of two negative integers is 36. The second integer is 5 more than the first. Find the integers.
22. The length of a rectangular pizza is 4 in. less than twice its width. The area of the pizza is 160 in.^2 . Find the dimensions of the pizza.
23. **Open-Ended** Write a polynomial that is a difference of two squares using the variable m . Write the polynomial in factored and standard forms.
24. **Extended Response** Solve the following system of equations by graphing:

$$\begin{aligned} 2x - 4y &\leq 4 \\ -3x - 6y &> 6 \end{aligned}$$