Name _____ Class _____ Date _____

Cumulative Review

Chapters 1–8

Multiple Choice

For Exercises 1–11 choose the correct letter.

1. 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

2. Solve $8y = -100$.

F. -800 **G.** -12.5 **H.** 800 **I.** 12.5

3. 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.** $y = 3x + 1$

4. Solve $\begin{matrix} 3x + 7y = -2 \\ 4x - 3y = 22 \end{matrix}$.

F. $(-4, -2)$ **G.** $(-4, 2)$ **H.** $(4, 2)$ **I.** $(4, -2)$

5. Simplify $\frac{10x^5y^3}{2x^6y}$.

A. $5xy^2$ **B.** $\frac{5y^2}{x}$ **C.** $\frac{5x}{y^2}$ **D.** $\frac{x}{5y^2}$

6. Simplify $(3x - 1)(x + 4)$.

F. $3x^2 - 4$ **G.** $3x^2 - 11x - 4$ **H.** $3x^2 + 11x - 4$ **I.** $3x^2 + 13x - 4$

7. A scuba diver at a depth of 80 ft begins her ascent to the ocean surface. Her rate of change in depth is 2ft/s. Which expression represents her depth in feet t seconds after she begins her ascent?

A. $2t - 80$ **B.** $80 - 2t$ **C.** $-80 - 2t$ **D.** $80 + 2t$

8. Factor $4x^2 - x - 14$.

F. $(4x + 7)(x - 2)$ **G.** $(2x - 7)(2x + 2)$ **H.** $(4x - 7)(x + 2)$ **I.** $(2x + 7)(2x - 2)$

9. What is the GCF of the terms of $3x^3 + 6x^2 - 9x$?

A. x **B.** 3 **C.** $3x$ **D.** $3x^2$

10. Which number is *not* a solution of the compound inequality $7 - 4x \leq 3$ and $-x - 5 > -10$?

F. 5 **G.** 4 **H.** 2 **I.** 1

11. 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 1–8

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. What is the x-intercept of the line with equation $5x + 4y = 30$?

19. How many positive solutions are there to the equation $|2x - 5| = 4$?

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. Write a polynomial that is a difference of two squares using the variable m. Write the polynomial in factored and standard forms.

24. Solve the following system of inequalities by graphing:

$$2x - 4y \leq 4$$
$$-3x - 6y > 6$$