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CHAPTERS**Cumulative Assessment, page 1**

Write the letter of the best answer.

- _____ 1. Simplify $48 \div 4 \times 2 + 4 \div 2$.
a. 8 b. 14 c. 26 d. 36
- _____ 2. Evaluate $r^2 + rs$ given $r = -3$ and $s = 5$.
a. -24 b. -6 c. 11 d. 24
- _____ 3. Solve $\frac{4}{5} + c = 4$.
a. $c = -3\frac{1}{5}$ b. $c = 3\frac{1}{5}$ c. $c = 4\frac{4}{5}$ d. $c = 5$
- _____ 4. Solve $7.8 = 3x$.
a. $x = 2.6$ b. $x = 4.8$ c. $x = 7.5$ d. $x = 10.8$
- _____ 5. Given $h = -4$, which has the same value as $-(-h)$?
I. $|h|$ II. $-|h|$ III. $|-h|$
a. I b. II c. I or III d. II or III
- _____ 6. Solve $2p + pq = r$ for q .
a. $q = r - p$ b. $q = \frac{r}{2p} - p$ c. $q = \frac{r}{2p^2}$ d. $q = \frac{r - 2p}{p}$
- _____ 7. A collection of 24 nickels and dimes has a total value of \$2.00. Which equation can you use to find the number of nickels, n , in the collection?
a. $n + (24 - n) = 2.00$ b. $0.05n + 0.10n = 24(2.00)$
c. $0.05n + 0.10(24 - n) = 2.00$ d. $0.05(n - 24) + 0.10(24 - n) = 2.00$
- _____ 8. Which ordered pair is *not* a solution to $y = -x^2 - x$?
a. $(-2, -2)$ b. $(-1, 1)$ c. $(1, -2)$ d. $(0, 0)$
- _____ 9. Find the slope of the line that contains the points $S(-4, 2)$ and $T(4, -4)$.
a. $-\frac{3}{4}$ b. $-\frac{4}{3}$ c. $\frac{1}{4}$ d. 0
- _____ 10. It costs \$30 to rent a bicycle for 3 hours and \$42 to rent it for 5 hours. The cost function is linear. What is the cost of renting the bicycle for 12 hours?
a. \$84 b. \$100.80 c. \$108 d. \$120
- _____ 11. Which is the equation of the line parallel to $y = 3x - 7$ and containing $P(1, 0)$?
a. $y = -3x + 5$ b. $y = -\frac{1}{3}x + 5$ c. $y = 3x + 5$ d. $y = 3x - 3$

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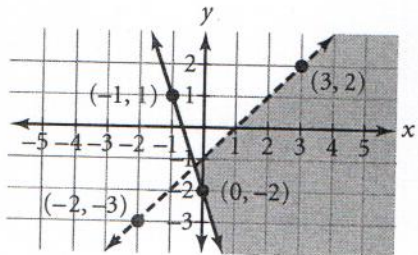
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- _____ 12. Solve $-6 \geq -k$.
 a. $k \geq -6$ b. $k \geq 6$ c. $k \leq -6$ d. $k \leq 6$
- _____ 13. What are all the solutions of $|m - 9| = 1$?
 a. 10 b. 8 and -8 c. 8 and 10 d. 10 and -10
- _____ 14. A manufacturer's policy is that the actual weight of a box of cereal can vary no more than 0.05 ounces from the labeled weight of 24 ounces. Which inequality can you use to find w , the acceptable weight in ounces for a box of cereal?
 a. $|w - 0.5| \geq 24$ b. $|w - 0.5| \leq 24$
 c. $|w - 24| \geq 0.5$ d. $|w - 24| \leq 0.5$
- _____ 15. Which ordered pair is a solution to the system at right?
 I. $(0, -2)$ II. $(1, 0)$ III. $(2, 2)$

$$\begin{cases} 6x - 3y = 6 \\ y = 2x - 2 \end{cases}$$

 a. I and II b. III c. I, II, and III d. none of these
- _____ 16. To make 5 liters of a 20% salt solution, you combine a liters of a 15% salt solution with b liters of a 30% salt solution. Which system can you use to find a and b ?
 a.
$$\begin{cases} a + b = 0.20 \\ 0.15a + 0.30b = 5 \end{cases}$$
 b.
$$\begin{cases} a + b = 5 \\ 0.15a + 0.30b = 0.20(5) \end{cases}$$

 c.
$$\begin{cases} a + b = (0.15 + 0.30)(5) \\ 0.15a + 0.30b = 0.20(5) \end{cases}$$
 d.
$$\begin{cases} a + b = 5 \\ 0.15a + 0.30b = 0.20 \end{cases}$$
- _____ 17. Which system is graphed on the coordinate plane at right?
 a.
$$\begin{cases} y < x - 1 \\ y \geq -3x - 2 \end{cases}$$
 b.
$$\begin{cases} y > x - 1 \\ y \geq -3x - 2 \end{cases}$$

 c.
$$\begin{cases} y \leq x - 1 \\ y > -3x - 2 \end{cases}$$
 d.
$$\begin{cases} y \geq x - 1 \\ y > -3x - 2 \end{cases}$$
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- _____ 18. Simplify 5^{-3} .
 a. -15 b. -125 c. $\frac{1}{125}$ d. $-\frac{1}{125}$
- _____ 19. If y varies directly as the square of x , and $y = 5$ when $x = 2$, find y when $x = 6$.
 a. $y = 15$ b. $y = 28.8$ c. $y = 35$ d. $y = 45$
- _____ 20. Classify $3v^2 - 3 + 6v^2$ by degree and number of terms.
 a. quadratic trinomial b. quadratic binomial
 c. cubic binomial d. quadratic monomial

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- _____ 21. You invest \$500 in an account at the end of each year for 4 years. Given that the account pays simple interest at an annual rate of r (where r is expressed as a decimal), which polynomial represents the total amount in dollars in the account at the end of the fourth year?
- a. $2000(1 + r)^3 + 1500(1 + r)^2 + 1000(1 + r) + 500$
 b. $500(1 + r)^3 + 500(1 + r)^2 + 500(1 + r) + 500$
 c. $500(1 + r)^4 + 500(1 + r)^3 + 500(1 + r)^2 + 500$
 d. $500(1 + r)^4 + 500(1 + r)^3 + 500(1 + r)^2 + 500(1 + r)$
- _____ 22. Simplify $(6g^2 - 2g - 1) - (2g^3 - 3g^2 + 5)$.
- a. $-2g^3 + 9g^2 - 2g - 6$ b. $-2g^3 + 3g^2 - 2g + 4$
 c. $4g^5 + g^3 - 6$ d. $4g^3 + g^2 - 6$
- _____ 23. Simplify $(2r^3s)(-5r^2s)$.
- a. $-3r^5s^2$ b. $-3r^6s^2$ c. $-10r^6s$ d. $-10r^5s^2$
- _____ 24. Simplify $(z - 2)(z + 3)$.
- a. $2z + 1$ b. $-z + 3$ c. $z^2 - 5z - 6$ d. $z^2 + z - 6$
- _____ 25. Simplify $\frac{d^2 - d - 2}{d - 2}$. Assume that the denominator is not equal to zero.
- a. d^2 b. $d^2 - 1$ c. $d + 1$ d. $d^2 - d + 1$
- _____ 26. Factor $24t^2 - 18t$ using the GCF of its terms.
- a. $2t(12t - 9)$ b. $3t(8t - 6)$ c. $t(24t - 18)$ d. $6t(4t - 3)$
- _____ 27. Factor $9f^2 - 1$.
- a. $(3f - 1)(3f - 1)$ b. $(3f + 1)(3f - 1)$ c. $3f(3f - 1)$ d. $9(f^2 - 1)$
- _____ 28. Which trinomial *cannot* be factored using integers?
- a. $c^2 - 13c + 48$ b. $c^2 - 13c - 48$ c. $c^2 - 2c - 48$ d. $c^2 - 16c + 48$
- _____ 29. Factor $8j^2 + j - 9$.
- a. $(8j - 1)(j + 9)$ b. $(8j - 9)(j + 1)$ c. $(8j + 9)(j - 1)$ d. $(4j + 3)(2j - 3)$
- _____ 30. Which equation has exactly the same solutions as $(u - 1)(u + 4) = 6$?
- a. $(u - 1)(u + 4) = 0$ b. $(u + 1)(u + 2) = 0$
 c. $(u + 2)(u - 5) = 0$ d. $(u - 2)(u + 5) = 0$
- _____ 31. Which is a solution of $2h^3 + 8h^2 + 8h = 0$?
- I. $h = -2$ II. $h = 0$ III. $h = 2$
- a. I b. I and II c. I and III d. I, II, and III

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- _____ 32. Find the coordinates of the vertex of the parabola that is defined by the equation $y = -x^2 - 6x + 2$.
- a. (-3, 11) b. (-1, 7) c. (1, -5) d. (3, -25)
- _____ 33. Which statement describes the graph of $y = 3x^2 - 12x - 36$?
- a. It is a parabola with y -intercepts -6 and 2 and with x -intercept -36 .
 b. It is a parabola with x -intercepts -6 and 2 and with y -intercept -36 .
 c. It is a parabola with x -intercepts 6 and -2 and with y -intercept -36 .
 d. It is a line with y -intercept -6 , x -intercept 2 , and slope 3 .
- _____ 34. What is the simplest radical form of $\sqrt{180}$?
- a. $3\sqrt{20}$ b. $6\sqrt{5}$ c. $5\sqrt{6}$ d. $18\sqrt{5}$
- _____ 35. A ladder that is 20 feet long rests against a vertical wall so that it touches the wall at a point 18 feet above the ground. At what distance from the base of the wall does the ladder touch the ground?
- a. 2 feet b. $2\sqrt{19}$ feet c. $2\sqrt{181}$ feet d. 4 feet
- _____ 36. Find all solutions to $2m^2 + 18 = 0$.
- a. $m = -3$ or $m = 3$ b. $m = -3i$ or $m = 3i$
 c. $m = -9i$ or $m = 9i$ d. $m = -3\sqrt{2}$ or $m = 3\sqrt{2}$
- _____ 37. Find all solutions to $5(k + 1)^2 = 10$.
- a. $k = 1$ b. $k = \sqrt{2}$ or $k = -\sqrt{2}$
 c. $k = -1 + \sqrt{2}$ or $k = -1 - \sqrt{2}$ d. $k = -1 + 5\sqrt{2}$ or $k = -1 - 5\sqrt{2}$
- _____ 38. Which expression can be used to find the solutions to $z^2 = 7z + 6$?
- a. $\frac{-7 \pm \sqrt{(7)^2 - 4(1)(6)}}{2(1)}$ b. $\frac{-(-7) \pm \sqrt{(-7)^2 - 4(1)(6)}}{2(1)}$
 c. $\frac{-(-7) \pm \sqrt{(-7)^2 - 4(1)(-6)}}{2(1)}$ d. $\frac{(-7)^2 \pm \sqrt{-7 - 4(1)(-6)}}{2(1)}$
- _____ 39. If the following pattern of dots continues, how many dots would be in the 9th group?
- Group 1: • Group 2: ••• Group 3: ••••• Group 4: •••••••••
- a. 19 b. 78 c. 81 d. 97
- _____ 40. A ball is thrown directly upward from a height of 64 feet above ground. Its initial velocity is 96 feet per second. After how many seconds will its height again be 64 feet?
- a. 4.0 seconds b. 4.4 seconds c. 5.0 seconds d. 6.0 seconds

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