Algebra 2CP **Chapters 1-3, 5-8 Spring Review Worksheet** **Name** _____ **Period** _____

Chapter 1: Solving Equations

1. $23 = 5 - \frac{2}{3}m$

A. -42 **B.** -12 **C.** -27 **D.** 42 1. _____

2. $5(2x - 6) = 7x - 3$

A. -9 **B.** 9 **C.** 11 **D.** $\varnothing$ 2. _____

3. Jamie is 4 years younger than her brother. Five years from now, the sum of their ages will be 32. Find Jamie's present age.

A. 9 **B.** 10 **C.** 13 **D.** 14 3. _____

4. One side of a triangle is four centimeters longer than the shortest side. The third side of the triangle is twice as long as the shortest side. Find the length of the longest side of the triangle if its perimeter is 40 centimeters.

A. 9 cm **B.** 13 cm **C.** 24 cm **D.** 18 cm 4. _____

Chapter 2: Writing Linear Equations

5. Write $y - 4x = 7$ in standard form.

A. $4x - y = -7$ **B.** $4x + y = 7$ **C.** $y = 4x + 7$ **D.** $4x = y - 7$ 5. _____

6. Write an equation in slope-intercept form for the line that has a slope of $-\frac{4}{5}$ and passes through (0, 7).

A. $y = 7x$ **B.** $y = 7x - \frac{4}{5}$ **C.** $y = \frac{4}{5}x + 7$ **D.** $y = -\frac{4}{5}x + 7$ 6. _____

7. Write an equation for the line that passes through (0, 1) and is perpendicular to the line whose equation is $y = 2x$.

A. $y = -2x + 1$ **B.** $y = 2x + 1$ **C.** $y = \frac{1}{2}x + 1$ **D.** $y = -\frac{1}{2}x + 1$ 7. _____

Chapter 3: Solving and Writing Systems of Linear Equations

8. $3x - 2y = 5$
$x = y + 2$

A. (1, 1) **B.** (2, 0) **C.** (0, -2) **D.** (1, -1) 8. _____

9. $2x + 3y = 5$
$3x - 2y = 1$

A. (3, 4) **B.** (-2, 3) **C.** (1, 1) **D.** (4, -1) 9. _____

10. What is the value of y in the solution of the system of equations?

$2x + y + z = 13$
$2x - y - 3z = -3$
$x + 2y + 4z = 20$

A. 1 **B.** 2 **C.** 3 **D.** 4 10. _____

11. The 300 students at Holmes School work a total of 5000 hours each month. Each student in group A works 10 hours, each in group B works 15 hours, and each in group C works 20 hours each month. There are twice as many students in group B as in group A. Which equation would *not* be included in the system used to solve this problem?

A. $A = 2B$ **B.** $10A + 15B + 20C = 5000$
C. $A + B + C = 300$ **D.** $B = 2A$ 11. _____

Chapter 5: Solving Quadratic Equations

12. $x^2 - 3x - 10 = 0$

A. $\{-5, 2\}$ **B.** $(-2, 5)$ **C.** $\{-2, 5\}$ **D.** $\{-10, 1\}$

12. _____

13. $2x^2 - 6x = 0$

A. $\{-3, 0\}$ **B.** $\{0, 3\}$ **C.** $\{0, 6\}$ **D.** $\{-3, 3\}$

13. _____

14. $x^2 - 3x = 18$

A. $\{6\}$ **B.** $\{-6, 3\}$ **C.** $\{-9, 2\}$ **D.** $\{-3, 6\}$

14. _____

15. $3x^2 = 20 - 7x$

A. $\{-10, 2\}$ **B.** $\left\{-5, \frac{4}{3}\right\}$ **C.** $\left\{-4, \frac{5}{3}\right\}$ **D.** $\left\{-20, \frac{1}{3}\right\}$

15. _____

16. To solve $x^2 + 8x + 16 = 25$ by using the Square Root Property, you would first rewrite the equation as _____.

A. $(x + 4)^2 = 25$ **B.** $x^2 + 8x - 9 = 0$

C. $(x + 4)^2 = 5$ **D.** $x^2 + 8x = 9$

16. _____

17. The quadratic equation $x^2 + 6x = 1$ is to be solved by completing the square. Which equation would be the first step in that solution?

A. $x^2 + 6x - 1 = 0$ **B.** $x^2 + 6x + 36 = 1 + 36$

C. $x(x + 6) = 1$ **D.** $x^2 + 6x + 9 = 1 + 9$

17. _____

18. The quadratic equation $x^2 - 8x = -20$ is to be solved by completing the square. Which equation would be a step in that solution?

A. $(x - 4)^2 = 4$ **B.** $x - 4 = \pm 2i$

C. $x^2 - 8x + 20 = 0$ **D.** $x^2 - 8x + 16 = -20$

18. _____

Chapter 6: Solving Polynomial Equations

19. Solve $x^4 - 13x^2 + 36 = 0$.

A. $-3, -2, 2, 3$ **B.** $-9, -4, 4, 9$ **C.** $2, 3, 2i, 3i$ **D.** $-2, -3, 2i, 3i$

19. _____

20. Solve $x^4 - 6x^2 - 27 = 0$.

A. $\sqrt{3}, 3, 3i, i\sqrt{3}$ **B.** $-3, -\sqrt{3}, \sqrt{3}, 3$

C. $-3, 3, i\sqrt{3}, -i\sqrt{3}$ **D.** $-\sqrt{3}, 3, 3i, -3i$

20. _____

21. Solve $b^4 + 2b^2 - 24 = 0$.

A. $-2, -\sqrt{6}, \sqrt{6}, 2$ **B.** $-\sqrt{6}, 2, 2i, i\sqrt{6}$

C. $-2, 2, -i\sqrt{6}, i\sqrt{6}$ **D.** $-2i, 2i, -\sqrt{6}, \sqrt{6}$

21. _____

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Chapter 7: Operations with Radicals

22. Simplify $\sqrt{48}$.

A. $16\sqrt{3}$ **B.** $4\sqrt{3}$ **C.** 6 **D.** $4\sqrt{6}$

23. Simplify $\sqrt{5} + \sqrt{20} - \sqrt{27} + \sqrt{147}$.

A. $5\sqrt{3} + 6$ **B.** $3\sqrt{5} + 4\sqrt{3}$ **C.** $3\sqrt{5} + 10\sqrt{3}$ **D.** $2\sqrt{5} - 3\sqrt{3}$

24. Simplify $\sqrt{32} - \sqrt{18} + \sqrt{54} + \sqrt{150}$.

A. $7\sqrt{2} - 2\sqrt{6}$ **B.** $7\sqrt{2} + 8\sqrt{6}$ **C.** $3\sqrt{2} + 3\sqrt{6}$ **D.** $\sqrt{2} + 8\sqrt{6}$

25. Simplify $\frac{6}{4 + \sqrt{2}}$.

A. $\frac{12 - 6\sqrt{2}}{7}$ **B.** $\frac{4 - \sqrt{2}}{2}$ **C.** $\frac{4 - \sqrt{2}}{3}$ **D.** $\frac{12 - 3\sqrt{2}}{7}$

26. Simplify $\frac{5}{2 - \sqrt{3}}$.

A. $10 + 5\sqrt{3}$ **B.** $10 - 5\sqrt{3}$ **C.** $-10 - 5\sqrt{3}$ **D.** $-10 + 5\sqrt{3}$

Chapter 8: Solving Rational Equations

27. Solve $\frac{x}{x - 2} = \frac{7}{5}$.

A. -7 **B.** 5 **C.** 7 **D.** $-\frac{5}{7}$

28. Solve $y + 4 = \frac{5}{y}$.

A. $-5, 1$ **B.** $-1, 5$ **C.** ± 1 **D.** $\varnothing$

29. Solve $\frac{n}{n - 4} + n = \frac{12 - 4n}{n - 4}$.

A. $-4, 3$ **B.** $-3, 4$ **C.** -4 **D.** 3

30. Solve $\frac{n}{n - 4} + n = \frac{12 - 4n}{n - 4}$.

A. $-4, 3$ **B.** $-3, 4$ **C.** -4 **D.** 3

22. _____

23. _____

24. _____

25. _____

26. _____

27. _____

28. _____

29. _____

30. _____