Algebra 2CP **Chapters 1-3 Fall Review Worksheet** **Name** _____ **Period** _____

Chapter 1: Evaluating Expressions

1. Find the value of $5 + 4 \cdot 3 \div 6 - 1$.

   A. $\frac{7}{2}$ **B.** $\frac{27}{5}$ **C.** 6 **D.** $\frac{17}{5}$

2. Evaluate $2b(4a - c^2)$ if $a = 5$, $b = \frac{3}{2}$, and $c = 11$.

   A. -303 **B.** 423 **C.** -6 **D.** $-\frac{303}{2}$

3. Evaluate $-|3c - d|$ if $c = -1$ and $d = 5$.

   A. 8 **B.** 2 **C.** -7 **D.** -8

4. The formula for the surface area of a sphere is $A = 4\pi r^2$, where r is the length of the radius. Find the surface area of a sphere with a radius of 14 feet. Use $\frac{22}{7}$ for π.

   A. 7248 ft^2 **B.** 7744 ft^2 **C.** 2464 ft^2 **D.** 704 ft^2

5. Simplify $\frac{1}{3}(15x - 9) + \frac{1}{5}(25x + 5)$.

   A. $10x - 2$ **B.** $\frac{64}{3}x - \frac{32}{15}$ **C.** $5x - 2$ **D.** $\frac{1}{5}(40x - 4)$

Chapter 1: Solving Equations

6. $23 = 5 - \frac{2}{3}m$

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

7. $18 = 3|4x - 10|$

   A. $\{1, -1\}$ **B.** $\{1, 4\}$ **C.** $\{4, -4\}$ **D.** $\{4\}$

8. $5(2x - 6) = 7x - 3$

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

9. $|x - 3| + 10 = 2$

   A. $\{-5\}$ **B.** $\{-5, 11\}$ **C.** $\{11\}$ **D.** $\varnothing$

10. 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

11. 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

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1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____

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Chapter 1: Solving Inequalities

12. $|2x - 3| \leq 7$

A. $\{x \mid x \leq 5\}$ **B.** $\{x \mid -5 \leq x \leq 5\}$

C. $\{x \mid -2 \leq x \leq 5\}$ **D.** all real numbers

12. _____

13. $2|m + 7| > 8$

A. $\{m \mid -11 < m < -3\}$ **B.** all real numbers

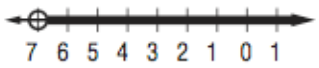
C. $\{m \mid m < -13 \text{ or } m > -1\}$ **D.** $\{m \mid m < -11 \text{ or } m > -3\}$

13. _____

14. Identify the graph of the solution set of $-2.3 < 4 + 0.9y$.

14. _____

A.



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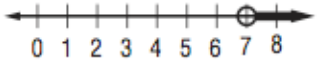

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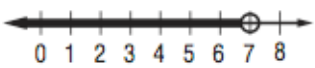
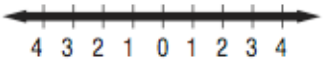


D.



Chapter 2: Domain, Range and Functions

15. Find the domain of the relation {(0, 0), (1, 1), (2, 0)}. Then determine whether the relation is a function.

A. {0, 1, 0}; function **B.** {0, 1, 0}; not a function

C. {0, 1, 2}; function **D.** {0, 1, 2}; not a function

15. _____

16. The table shows the annualized percent return of a mutual fund for several years. Find the range of the relation. Then determine whether the relation is a function.

Year	1	3	5	10
Percent Return	20.9	22.8	20.0	20.5

A. {20.9, 22.8, 20.0, 20.5}; not a function **B.** {1, 3, 5, 10}; not a function

C. {20.9, 22.8, 20.0, 20.5}; function **D.** {1, 3, 5, 10}; function

16. _____

Chapter 2: Evaluating Functions

17. Find $f(-1)$ if $f(x) = -3x - 5$.

A. -9 **B.** -8 **C.** -2 **D.** 2

17. _____

18. Find $f(0)$ if $f(t) = t^2 - 2t - 2$.

A. 2 **B.** -4 **C.** 0 **D.** -2

18. _____

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Chapter 2: All About Linear Equations and Functions

19. Write $y - 4x = 7$ in standard form. 19. _____

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

20. Find the x-intercept of the graph of $-5x + 10y = 20$. 20. _____

A. -2 **B.** 2 **C.** 4 **D.** -4

21. Find the slope of the line that passes through (0, 2) and (8, 8). 21. _____

A. 8 **B.** $\frac{4}{3}$ **C.** $\frac{3}{4}$ **D.** $\frac{5}{4}$

22. If a line rises to the right, its slope is ___?___. 22. _____

A. zero **B.** positive **C.** negative **D.** undefined

23. What is the slope of a line that is perpendicular to the graph of $y = 2x + 5$? 23. _____

A. $-\frac{1}{2}$ **B.** $\frac{1}{2}$ **C.** 2 **D.** -2

24. Graph the line through (2, 3) that is parallel to the line with equation $y = -1$. Which point below also lies on that line? 24. _____

A. (2, 9) **B.** (−5, 3) **C.** (0, 1) **D.** (1, 4)

25. Write an equation in slope-intercept form for the line that has a slope of $-\frac{4}{5}$ and passes through (0, 7). 25. _____

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

26. Write an equation for the line that passes through (0, 1) and is perpendicular to the line whose equation is $y = 2x$. 26. _____

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

Chapter 3: All About Systems of Equations and Inequalities

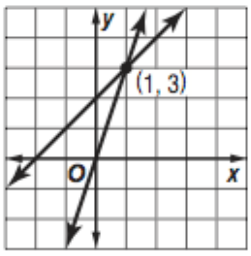
27. $3x - 2y = 5$
$x = y + 2$ 27. _____

A. (1, 1) **B.** (2, 0) **C.** (0, −2) **D.** (1, −1)

28. $2x + 3y = 5$
$3x - 2y = 1$ 28. _____

A. (3, 4) **B.** (−2, 3) **C.** (1, 1) **D.** (4, −1)

29. Which system of equations is graphed? 29. _____



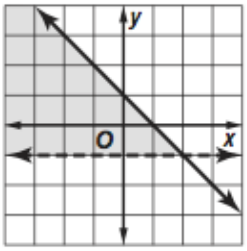
A. $y - \frac{1}{3}x = 0$
$x - y = -2$

B. $y - 3x = 0$
$x - y = -2$

C. $y - 3x = 0$
$x - y = 2$

D. $y - \frac{1}{3}x = 0$
$x - y = 2$

30. Which system of inequalities is graphed?



A. $y > -1$
$y \geq -2x+1$

B. $y > -1$
$y \leq -2x + 1$

C. $y \geq -1$
$y \geq -2x + 1$

D. $y > -1$
$y < -2x + 1$

30. _____

31. 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

31. _____

32. 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. $B = 2A$

32. _____