

Name: _____

Class: _____

Date: _____

ID: A

Prerequisite Skills Worksheet

Solve the equation.

1. $11 = -x + 17$

$$\begin{array}{r} -17 \\ -17 \end{array} \quad x = 6$$

2. $7 = \frac{14 + y}{-6}$

$$-42 = 14 + y$$

$$-56 = y$$

3. $45 - 5 + 3n = 70$

$$\begin{array}{r} 40 + 3n = 70 \\ 3n = 30 \end{array}$$

$$n = 10$$

4. $\frac{2p}{3} + 9 = -1$

$$\frac{2p}{3} = -10$$

$$p = -15$$

5. $8(2.5y - 10) = 9$

$$\begin{array}{r} 20y - 80 = 9 \\ 20y = 89 \end{array}$$

$$y = \frac{89}{20}$$

6. $9d - 2d - d + 8 = 5d$

$$\begin{array}{r} 6d + 8 = 5d \\ d = -8 \end{array}$$

7. $\frac{6}{a} = \frac{18}{27}$

$$\begin{array}{r} 18a = 162 \\ a = 9 \end{array}$$

8. $\frac{5}{7} = \frac{m}{35}$

$$\begin{array}{r} 7m = 175 \\ m = 25 \end{array}$$

9. $\frac{n-6}{3n} = \frac{n-5}{3n+1}$

$$3n(n-5) = (n-6)(3n+1)$$

$$3n^2 - 15n = 3n^2 - 17n - 6$$

$$2n = -6$$

$$n = -3$$

10. $\frac{3y-8}{12} = \frac{y}{5}$

$$12y = 5(3y-8)$$

$$12y = 15y - 40$$

$$\begin{array}{r} -3y = -40 \\ y = \frac{40}{3} \end{array}$$

11. $\frac{y-3}{3} = \frac{2}{y+2}$

$$(y+2)(y-3) = 6$$

$$y^2 - y - 6 = 6$$

$$y^2 - y - 12 = 0$$

$$(y-4)(y+3) = 0$$

$$y = 4, -3$$

12. Find a solution to the following system of equations.

$$x + 5y = -2$$

$$-3x + 5y = 6$$

$$(-2, 0)$$

$$-3(-5y-2) + 5y = 6$$

$$15y + 6 + 5y = 6$$

$$20y = 0$$

$$x = -2$$

$$y = 0$$

13. Find a solution to the following system of equations.

$$y = 3x - 6$$

$$y = 2x - 9$$

$$3x - 6 = 2x - 9$$

$$x = -3$$

$$y = -15$$

$$(-3, -15)$$

14. Find a solution to the following system of equations.

$$5x + 4y = -28$$

$$5x + 8y = -36$$

$$-4y = 8$$

$$y = -2$$

$$5x - 8 = -28$$

$$5x = -20$$

$$x = -4$$

$$(-4, -2)$$

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15. Solve for y.

$$6x + 4y = 92$$

$$4y = -6x + 92$$

$$y = -\frac{3}{2}x + 23$$

16. Solve for y.

$$2x - 2y = -76$$

$$-2y = -2x - 76$$

$$y = x + 38$$

Simplify the radical expression.

17. $-\sqrt{108}$ $-\sqrt{36 \cdot 3}$

$$-6\sqrt{3}$$

18. $\sqrt{\frac{14}{81}}$ $\frac{\sqrt{14}}{9}$

19. $\frac{10\sqrt{44}}{\sqrt{28}}$ $\frac{10\sqrt{4} \cdot \sqrt{11}}{\sqrt{4} \cdot \sqrt{7}} = \frac{10\sqrt{11}}{\sqrt{7}} = \frac{10\sqrt{77}}{7}$

20. $\frac{2}{\sqrt{3}}$ $\frac{2\sqrt{3}}{3}$

21. Write an equation in slope intercept form for the line through the given point with the given slope.

$(10, 3); m = \frac{3}{2}$

$$y - 3 = \frac{3}{2}(x - 10)$$

$$y - 3 = \frac{3}{2}x - 15$$

$$y = \frac{3}{2}x - 12$$

22. Write the equation of the line in slope intercept form that passes through the following points.

$(1, 5), (6, -2)$

$$m = \frac{5 - (-2)}{1 - 6} = -\frac{7}{5}$$

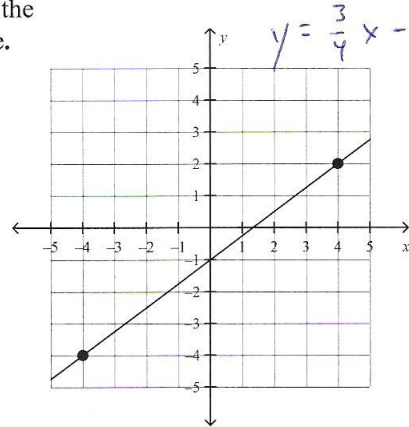
$$y - 5 = -\frac{7}{5}(x - 1)$$

$$y - 5 = -\frac{7}{5}x + \frac{7}{5}$$

$$y = -\frac{7}{5}x + 6.4$$

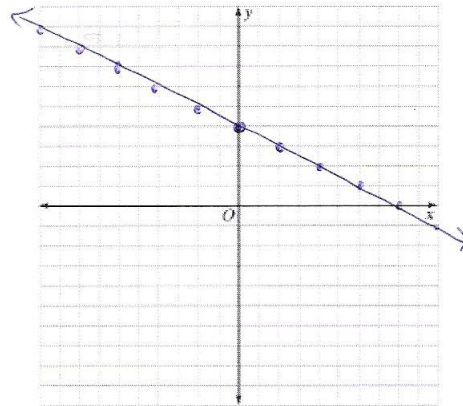
$$y = -1.4x + 6.4$$

23. Write the slope-intercept form of the equation for the line.



24. Graph the equation on the grid below.

$$y = -\frac{1}{2}x + 4$$



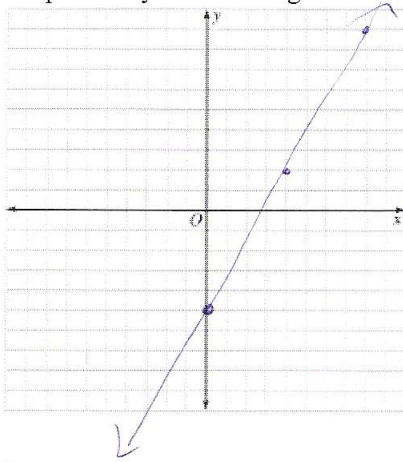
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$$-4y = -7x + 20$$

$$y = \frac{7}{4}x - 5$$

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25. Graph $7x - 4y = 20$ on the grid below.



26. Determine the value of the variable A.

$$A = \frac{1}{2}(b_1 + b_2)h;$$

$$b_1 = 12 \text{ in.}, b_2 = 8 \text{ in.}, \text{ and } h = 7 \text{ in.}$$

$$A = \frac{1}{2}(12 + 8)7$$

$$A = 70$$

27. Determine the value of the variable h.

$$A = \frac{1}{2}(b_1 + b_2)h;$$

$$A = 84 \text{ in}^2, b_1 = 6 \text{ in.}, \text{ and } b_2 = 8 \text{ in.}$$

$$84 = \frac{1}{2}(6 + 8)h$$

$$84 = 7h$$

$$12 = h$$

28. Determine the value of the variable x.

$$3y = 3z + 5x; \quad y = 23, \text{ and } z = 8.$$

$$3(23) = 3(8) + 5x$$

$$69 = 24 + 5x$$

$$45 = 5x$$

$$9 = x$$

29. Use the quadratic formula to solve the equation. Leave answers in simplified radical form

$$5y^2 - 8y = -3$$

$$5y^2 - 8y + 3 = 0$$

$$\frac{8 \pm \sqrt{64 - 4(5)(3)}}{2(5)}$$

$$\frac{8 \pm \sqrt{4}}{10}$$

$$\frac{8+2}{10}$$

$$\frac{8-2}{10}$$

$$1 \text{ or } \frac{3}{5}$$

30. Use the quadratic formula to solve the equation. Leave answers in simplified radical form.

$$x^2 - 2x - 8 = 0$$

$$\frac{2 \pm \sqrt{4 - 4(1)(-8)}}{2(1)}$$

$$\frac{2 \pm \sqrt{36}}{2}$$

$$\frac{2+6}{2}$$

$$\frac{2-6}{2}$$

$$4 \text{ or } -2$$