Algebra 1: 3.3 Literal Eq Extra Practice **Name** _____ **Period** ____

Convert each equation from standard form to slope-intercept form ($y = mx + b$). Identify the slope and the y-intercept for each equation.

1. $-4x + 9y = 45$

$+4x \quad +4x$

$\frac{9y}{9} = \frac{4x}{9} + \frac{45}{9}$

$y = \frac{4}{9}x + 5$

slope $= \frac{4}{9}$

y-intercept $= 5$ or $(0, 5)$

2. $6x - 2y = -52$

$-6x \quad -6x$

$\frac{-2y}{-2} = \frac{-6x}{-2} - \frac{52}{-2}$

$y = 3x + 26$

slope $= 3$

y-intercept $= 26$ or $(0, 26)$

3. $12x + 28y = -84$

$-12x \quad -12x$

$\frac{28y}{28} = \frac{-12x}{28} - \frac{84}{28}$

$y = -\frac{3}{7}x - 3$

slope $= -\frac{3}{7}$

y-intercept $= -3$ or $(0, -3)$

Convert each equation from slope-intercept form to standard form ($Ax + By = C$). Find the x-intercept and y-intercept. Write the intercepts as ordered pairs. (x, y)

4. $y = \frac{2}{3}x - 6$

$\left[y = \frac{2}{3}x - 6\right] \times 3$

$3y = 2x - 18$

$-2x \quad -2x$

$-2x + 3y = -18$

or

$2x - 3y = 18$

$x = 0$

$2(0) - 3y = 18$

$\frac{-3y}{-3} = \frac{18}{-3}$

$y = -6$

$(0, -6)$

$y = 0$

$2x - 3(0) = 18$

$2x = 18$

$x = 9$

$(9, 0)$

5. $y = -5x - 13$

$+5x \quad +5x$

$5x + y = -13$

$x = 0$

$5(0) + y = -13$

$y = -13$

$(0, -13)$

$y = 0$

$5x + 0 = -13$

$\frac{5x}{5} = \frac{-13}{5}$

$x = -\frac{13}{5}$

$\left(-\frac{13}{5}, 0\right)$

6. $y = \frac{3}{4}x + 10$

$\left[y = \frac{3}{4}x + 10\right] \times 4$

$4y = 3x + 40$

$-3x \quad -3x$

$-3x + 4y = 40$

or

$3x - 4y = -40$

$x = 0$

$3(0) - 4y = -40$

$\frac{-4y}{-4} = \frac{-40}{-4}$

$y = 10$

$(0, 10)$

$y = 0$

$3x - 4(0) = -40$

$\frac{3x}{3} = \frac{-40}{3}$

$x = -\frac{40}{3}$

$\left(-\frac{40}{3}, 0\right)$

Solve each equation for the indicated variable.

7. $A=\frac{1}{2}h(a+b)$ *Solve for* h.

$$\left[A=\tfrac{1}{2}h(a+b)\right]2$$

$$\frac{2A}{a+b}=\frac{h(a+b)}{a+b}$$

$$\frac{2A}{a+b}=h$$

8. $A=\pi r^2 h$ *Solve for* r.

$$\frac{A}{\pi h}=\frac{\pi r^2 h}{\pi h}$$

$$\frac{A}{\pi h}=r^2$$

$$\sqrt[2]{\frac{A}{\pi h}}=\sqrt[2]{r^2}$$

$$\sqrt[2]{\frac{A}{\pi h}}=r$$

9. $w=\frac{xy}{z}$ *Solve for* x.

$$\left[w=\frac{xy}{z}\right]\times z$$

$$\frac{wz}{y}=\frac{xy}{y}$$

$$\frac{wz}{y}=x$$