

## Homework 35.2

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Solve each equation by factoring.

1)  $r^2 + 14r + 48 = 0$

$(r+6)(r+8) = 0$

$$\begin{array}{r} r+6=0 \\ -6 \end{array} \quad \begin{array}{r} r+8=0 \\ -8 \end{array}$$

$$\boxed{r=-6} \quad \boxed{r=-8}$$

$$\begin{array}{c} 48 \\ \hline 1 & 48 \\ 2 & 24 \\ 3 & 16 \\ 4 & 12 \\ +6 & +8 \end{array}$$

3)  $2n^2 + 19n + 35 = 0$

$2n^2 + 5n + 14n + 35 = 0$

$n(2n+5) + 7(2n+5) = 0$

$(2n+5)^2 = 0$

$\cancel{-5} \quad \cancel{-5}$

$\boxed{2n = -5} \quad \boxed{\frac{2n}{2} = \frac{-5}{2}}$

$$\begin{array}{c} 2(35) = 70 \\ \hline 1 & 70 \\ 2 & 35 \\ +5 & +14 \\ \hline 7 & 10 \end{array}$$

5) Write the function that has x-intercepts at (3,0) and (-5,0).

$$\begin{array}{r} x = 3 \\ -3 \end{array} \quad \begin{array}{r} x = -5 \\ +5 \end{array}$$

$$\boxed{x-3=0} \quad \boxed{x+5=0}$$

$y = (x-3)(x+5)$

Write the slope-intercept form of the equation of the line through the given point with the given slope.

7) through:  $(-5, 4)$ , slope  $= -\frac{8}{5}$   $y - y_1 = m(x - x_1)$  8) through:  $(0, -1)$ , slope = undefined

$$y - 4 = -\frac{8}{5}(x + 5)$$

$$y - 4 = -\frac{8}{5}x - 8$$

$$\cancel{+4} \quad \cancel{+4}$$

$$\boxed{y = -\frac{8}{5}x - 4}$$

Vertical line

$x = 0$

Solve each system by elimination.

9)  $-8x - 3y = -17$

$8x - 7y = -13$

$$\begin{array}{r} -10y = -30 \\ \hline -10 \quad -10 \end{array}$$

$y = 3$

$\boxed{(1, 3)}$

$-8x - 3(3) = -17$

$-8x - 9 = -17$

$\cancel{+9} \quad \cancel{+9}$

$\boxed{-8x = -8}$

$x = 1$

10)  $7x - 10y = 11$

$-4x + 10y = -2$

$$\begin{array}{r} 3x \\ \hline 3 \end{array} = \frac{9}{3}$$

$x = 3$

$7(3) - 10y = 11$

$21 - 10y = 11$

$\cancel{-21} \quad \cancel{-21}$

$$\begin{array}{r} -10y = -10 \\ \hline -10 \end{array}$$

$y = 1$

$\boxed{(3, 1)}$

## Answers to Homework 35.2

1)  $\{-8, -6\}$

2)  $\{4, -7\}$

3)  $\left\{-\frac{5}{2}, -7\right\}$

4)  $\left\{\frac{5}{7}, 5\right\}$

5)  $y = (x - 3)(x + 5)$

6)  $y = (x + 9)(x + 1)$

7)  $y = -\frac{8}{5}x - 4$

8)  $x = 0$

9)  $(1, 3)$

10)  $(3, 1)$