

Homework 27.1

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Factor each completely.

1)  $x^2 + 2x - 15$   
 $(x-3)(x+5)$

$$\begin{array}{r} -15 \\ 1 \quad 15 \\ -3 \quad +5 \end{array}$$

2)  $k^2 + 2k + 1$   
 $(k+1)(k+1)$   
 $(k+1)^2$

$$\begin{array}{r} +1 \\ +1 \quad +1 \end{array}$$

3)  $b^2 - 7b - 30$   
 $(b+3)(b-10)$

$$\begin{array}{r} -30 \\ 1 \quad 30 \\ 2 \quad 15 \\ +3 \quad -10 \\ 5 \quad 6 \end{array}$$

4)  $x^2 + 15x + 56$   
 $(x+7)(x+8)$

$$\begin{array}{r} 56 \\ 1 \quad 56 \\ 2 \quad 28 \\ 4 \quad 14 \\ +7 \quad +8 \end{array}$$

5)  $b^2 - 8b + 7$   
 $(b-1)(b-7)$

$$\begin{array}{r} +7 \\ -1 \quad -7 \end{array}$$

6)  $m^2 + 2m - 8$   
 $(m-2)(m+4)$

$$\begin{array}{r} -8 \\ 1 \quad 8 \\ -2 \quad +4 \end{array}$$

7)  $k^2 - 4$   
 $k^2 + 0k - 4$   
 $(k+2)(k-2)$

$$\begin{array}{r} -4 \\ 1 \quad 4 \\ +2 \quad -2 \end{array}$$

8)  $x^2 - 16$   
 $x^2 + 0x - 16$   
 $(x-4)(x+4)$

$$\begin{array}{r} -16 \\ 1 \quad 16 \\ 2 \quad 8 \\ -4 \quad +4 \end{array}$$

9)  $9b^2 - 1$   
 $(3b+1)(3b-1)$

10)  $25x^2 - 16$   
 $(25x+4)(25x-4)$

Solve each system by elimination.

11)  $-x + y = 5$   
 $+ 6x - y = -30$

$$\frac{5x}{5} = \frac{-25}{5}$$

$$x = -5$$

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

$$5 + y = 5$$

$$\begin{array}{r} -5 \quad -5 \\ \hline \end{array}$$

$$y = 0$$

$$\boxed{(-5, 0)}$$

12)  $12x - 7y = 9$  (1)  
 $-4x + 4y = 12$  (2)

$$\begin{array}{r} 12x - 7y = 9 \quad (1) \\ -12x + 12y = 36 \\ \hline \end{array}$$

$$\frac{5y}{5} = \frac{45}{5}$$

$$y = 9$$

$$\boxed{(6, 9)}$$

$$12x - 7(9) = 9$$

$$\begin{array}{r} 12x - 63 = 9 \\ +63 \quad +63 \\ \hline \end{array}$$

$$\frac{12x}{12} = \frac{72}{12}$$

$$x = 6$$

## Answers to Homework 27.1

1)  $(x + 5)(x - 3)$

2)  $(k + 1)^2$

3)  $(b - 10)(b + 3)$

4)  $(x + 8)(x + 7)$

5)  $(b - 7)(b - 1)$

6)  $(m - 2)(m + 4)$

7)  $(k + 2)(k - 2)$

8)  $(x + 4)(x - 4)$

9)  $(3b + 1)(3b - 1)$

10)  $(5x + 4)(5x - 4)$

11)  $(-5, 0)$

12)  $(6, 9)$