

Homework 31.1

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Solve each equation by factoring.

1) $(a+6)(a+3)=0$

$$\begin{array}{r} a+6=0 \\ -6 \quad -6 \\ \hline a=-6 \end{array} \qquad \begin{array}{r} a+3=0 \\ -3 \quad -3 \\ \hline a=-3 \end{array}$$

2) $(k-5)(k+4)=0$

$$\begin{array}{r} k-5=0 \\ +5 \quad +5 \\ \hline k=5 \end{array} \qquad \begin{array}{r} k+4=0 \\ -4 \quad -4 \\ \hline k=-4 \end{array}$$

3) $v^2 + 2v - 35 = 0$

$$\begin{array}{r} -35 \\ (v-5)(v+7)=0 \\ \hline -5 \quad +7 \\ v-5=0 \quad v+7=0 \\ +5 \quad +5 \\ \hline v=5 \quad v=-7 \end{array}$$

4) $b^2 + 7b = 0$

$$\begin{array}{r} b(b+7)=0 \\ b=0 \quad b+7=0 \\ \hline -7 \quad -7 \\ b=-7 \end{array}$$

5) $x^2 + 14x = -49$

$$\begin{array}{r} +49 \quad +49 \\ \hline x^2 + 14x + 49 = 0 \\ \hline +7 \quad +7 \\ (x+7)(x+7) = 0 \\ x+7=0 \quad x+7=0 \\ -7 \quad -7 \\ \hline x=-7 \quad x=-7 \end{array}$$

6) $x^2 + 10 = 7x$

$$\begin{array}{r} -7x \quad -7x \\ \hline x^2 - 7x + 10 = 0 \\ \hline +2 \quad +2 \\ (x-2)(x-5) = 0 \\ x-2=0 \quad x-5=0 \\ +5 \quad +5 \\ \hline x=2 \quad x=5 \end{array}$$

Find each product.

7) $(2p-8)(4p-1)$

$8p^2 - 2p - 32p + 8$

$8p^2 - 34p + 8$

8) $(4x-3)(2x+2)$

$8x^2 + 8x - 6x - 6$

$8x^2 + 2x - 6$

Answers to Homework 31.1

1) $\{-6, -3\}$
5) $\{-7\}$

2) $\{5, -4\}$
6) $\{5, 2\}$

3) $\{5, -7\}$
7) $8p^2 - 34p + 8$

4) $\{-7, 0\}$
8) $8x^2 + 2x - 6$