

## Solve by Factor/Square Roots

Solve each equation by factoring.

1)  $(k - 5)(5k - 2) = 0$

$$\begin{array}{l} k - 5 = 0 \\ +5 \quad +5 \end{array} \quad \begin{array}{l} 5k - 2 = 0 \\ +2 \quad +2 \end{array}$$

$$\begin{array}{l} 5k = 2 \\ \cancel{5} \quad \cancel{5} \\ k = \frac{2}{5} \end{array}$$

$$\boxed{k = 5 \quad k = \frac{2}{5}}$$

2)  $(b - 3)(b - 5) = 0$

$$\begin{array}{l} b - 3 = 0 \\ +3 \quad +3 \end{array} \quad \begin{array}{l} b - 5 = 0 \\ +5 \quad +5 \end{array}$$

$$\boxed{b = 3 \quad b = 5}$$

$$3) n^2 + 5n + 6 = 0$$

$$(n+2)(n+3) = 0$$

~~6~~  
~~5~~  
~~3~~

$$n+2=0 \quad n+3=0$$
$$\begin{array}{r|l} -2 & -2 \\ -3 & -3 \end{array}$$

$$\boxed{n = -3 \quad n = -2}$$

$$4) 3a^2 - 5a - 2 = 0$$

$$a^2 - 5a - 6 = 0$$
$$(x - \frac{6}{3})(x + \frac{1}{3}) = 0$$

~~6~~  
~~5~~  
~~1~~

$$x - 2 = 0$$
$$\begin{array}{r|l} +2 & +2 \end{array}$$

$$\boxed{x = 2}$$

$$x + \frac{1}{3} = 0$$
$$\begin{array}{r|l} -\frac{1}{3} & -\frac{1}{3} \end{array}$$

$$\boxed{x = -\frac{1}{3}}$$

Solve each equation by taking square roots.

5)  $-5 + 100n^2 = 59$

$+5 \quad +5$

$\frac{100n^2}{100} = \frac{64}{100}$

$\sqrt{n^2} = \sqrt{\frac{64}{100}}$

$n = \pm \frac{4}{5}$

6)  $5v^2 - 9 = 11$

$+9 \quad +9$

$\frac{5v^2}{5} = \frac{20}{5}$

$\sqrt{v^2} = \sqrt{4}$

$v = \pm 2$

$$7) 10a^2 + \cancel{5} = 865$$

$$\frac{10a^2 = 860}{\cancel{10} \quad \quad \quad \cancel{10}}$$

$$\sqrt{a^2} = \sqrt{86}$$

$$a = \pm \sqrt{86}$$

$$8) 5k^2 - \cancel{6} = -66$$

$$\frac{5k^2 = -60}{\cancel{5} \quad \quad \quad \cancel{5}}$$

$$\sqrt{k^2} = \sqrt{-12}$$

$$k = \pm 2\sqrt{3}$$