

Solve the following quadratic equations.

1. $x^2 - 3x + 2 = 0$

$$(x-2)(x-1) = 0$$

$$\begin{array}{l|l} x-2=0 & x-1=0 \\ \hline x=2 & x=1 \end{array}$$

$x = \{2, 1\}$

2. $z^2 - 5z + 4 = 0$

$$(z-4)(z-1) = 0$$

$$\begin{array}{l|l} z-4=0 & z-1=0 \\ \hline z=4 & z=1 \end{array}$$

$z = \{4, 1\}$

3. $x^2 - 8x + 16 = 0$

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

$$\begin{array}{l|l} x-4=0 & x-4=0 \\ \hline x=4 & x=4 \end{array}$$

$x = \{4\}$

4. $c^2 + 6c = -5$

$+5 \quad +5$

$c^2 + 6c + 5 = 0$

$$(c+5)(c+1) = 0$$

$$\begin{array}{l|l} c+5=0 & c+1=0 \\ \hline c=-5 & c=-1 \end{array}$$

$c = \{-5, -1\}$

5. $10m^2 + 10m = 0$

$10m(m+1) = 0$

$$\frac{10m}{10} = \frac{0}{10} \quad m+1=0$$

$$\begin{array}{l|l} m=0 & m=-1 \\ \hline & \end{array}$$

$m = \{0, -1\}$

6. $m^2 - 64 = 0$

$(m+8)(m-8) = 0$

$$\begin{array}{l|l} m+8=0 & m-8=0 \\ \hline m=-8 & m=8 \end{array}$$

$m = \{-8, 8\}$

7. $3x^2 - 12 = 0$

$3(x^2 - 4) = 0$

$3(x-2)(x+2) = 0$

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

$x = \{2, -2\}$

8. $2x^2 + 20x = -18$

$+18 \quad +18$

$2x^2 + 20x + 18 = 0$

$2(x^2 + 10x + 9) = 0$

$$\begin{array}{l|l} 2(x+1)(x+9) = 0 & \\ \hline x+1=0 & x+9=0 \\ \hline x=-1 & x=-9 \end{array}$$

$x = \{-1, -9\}$

9. $5x^2 - 60x = 140$

$-140 \quad -140$

$5x^2 - 60x - 140 = 0$

$5(x^2 - 12x - 28) = 0$

$$\begin{array}{l|l} 5(x-14)(x+2) = 0 & \\ \hline x-14=0 & x+2=0 \\ \hline x=14 & x=-2 \end{array}$$

$x = \{14, -2\}$