

# 6-3 page 3

$$\begin{aligned} 3x^2 + 30x + 75 &= 0 \\ 3(x^2 + 10x + 25) &= 0 \\ 3(x+5)(x+5) &= 0 \\ x+5 &= 0 \\ x &= -5 \end{aligned}$$

$$\begin{aligned} 5x^2 - 180 &= 0 \\ 5(x^2 - 36) &= 0 \\ 5(x-6)(x+6) &= 0 \\ x-6 &= 0 \quad x+6 = 0 \\ x &= 6, x = -6 \end{aligned}$$

$$\begin{aligned} 2x^2 - 20x + 50 &= 0 \\ 2(x^2 - 10x + 25) &= 0 \\ 2(x-5)(x-5) &= 0 \\ x-5 &= 0 \\ x &= 5 \end{aligned}$$

$$\begin{aligned} 3x^2 - 48 &= 0 \\ 3(x^2 - 16) &= 0 \\ 3(x+4)(x-4) &= 0 \\ x+4 &= 0 \quad x-4 = 0 \\ x &= -4 \quad x = 4 \end{aligned}$$

$$\begin{aligned} x^2 + 4x - 21 &= 0 \\ (x+7)(x-3) &= 0 \\ x+7 &= 0 \quad x-3 = 0 \\ x &= -7, x = 3 \end{aligned}$$

$$\begin{aligned} x^2 - 5x + 4 &= 0 \\ (x-1)(x-4) &= 0 \\ x-1 &= 0 \quad x-4 = 0 \\ x &= 1, x = 4 \end{aligned}$$

$$\begin{aligned} x^2 + 8x + 15 &= 0 \\ (x+3)(x+5) &= 0 \\ x+3 &= 0 \quad x+5 = 0 \\ x &= -3, x = -5 \end{aligned}$$

$$\begin{aligned} x^2 + 6x - 7 &= 0 \\ (x+7)(x-1) &= 0 \\ x+7 &= 0 \quad x-1 = 0 \\ x &= -7, x = 1 \end{aligned}$$

$$\begin{aligned} x^2 + 9x + 18 &= 0 \\ (x+3)(x+6) &= 0 \\ x+3 &= 0 \quad x+6 = 0 \\ x &= -3, x = -6 \end{aligned}$$

$$\begin{aligned} x^2 - 5x + 6 &= 0 \\ (x-3)(x-2) &= 0 \\ x-3 &= 0 \quad x-2 = 0 \\ x &= 3, x = 2 \end{aligned}$$

$$\begin{aligned} x^2 - 2x - 8 &= 0 \\ (x-4)(x+2) &= 0 \\ x-4 &= 0 \quad x+2 = 0 \\ x &= 4, x = -2 \end{aligned}$$

$$\begin{aligned} x^2 - x - 6 &= 0 \\ (x-3)(x+2) &= 0 \\ x-3 &= 0 \quad x+2 = 0 \\ x &= 3, x = -2 \end{aligned}$$

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

$$\begin{aligned} x^2 &= -10x + 11 \\ +10x - 11 \quad +10x - 11 \\ \hline x^2 + 10x - 11 &= 0 \\ (x+11)(x-1) &= 0 \\ x+11 &= 0 \quad x-1 = 0 \\ x &= -11, x = 1 \end{aligned}$$

$$\begin{aligned} x^2 + 9x + 14 &= 0 \\ (x+7)(x+2) &= 0 \\ x+7 &= 0 \quad x+2 = 0 \\ x &= -7, x = -2 \end{aligned}$$

$$\begin{aligned} x^2 + 8x + 12 &= 0 \\ (x+2)(x+6) &= 0 \\ x+2 &= 0 \quad x+6 = 0 \\ x &= -2, x = -6 \end{aligned}$$

$$\begin{aligned} x^2 - 4x - 12 &= 0 \\ (x-6)(x+2) &= 0 \\ x-6 &= 0 \quad x+2 = 0 \\ x &= 6, x = -2 \end{aligned}$$

$$\begin{aligned} x^2 &= -26x - 25 \\ +26x + 25 \quad +26x + 25 \\ \hline x^2 + 26x + 25 &= 0 \\ (x+25)(x+1) &= 0 \\ x+25 &= 0 \quad x+1 = 0 \\ x &= -25, x = -1 \end{aligned}$$

$$\begin{aligned} -12x + 32 &= -x^2 \\ +x^2 \quad +x^2 \\ \hline x^2 - 12x + 32 &= 0 \\ (x-4)(x-8) &= 0 \\ x-4 &= 0 \quad x-8 = 0 \\ x &= 4, x = 8 \end{aligned}$$

$$\begin{aligned} x^2 - 9x + 20 &= 0 \\ (x-5)(x-4) &= 0 \\ x-5 &= 0 \quad x-4 = 0 \\ x &= 5, x = 4 \end{aligned}$$

$$\begin{aligned} 5x^2 &= 5(x+6) \\ 5x^2 &= 5x + 30 \\ -5x - 30 \quad -5x - 30 \\ \hline 5x^2 - 5x - 30 &= 0 \\ 5(x^2 - x - 6) &= 0 \\ 5(x-3)(x+2) &= 0 \\ x-3 &= 0 \quad x+2 = 0 \\ x &= 3, x = -2 \end{aligned}$$

$$\begin{aligned} 8x^2 - 40x &= -32 \\ \quad +32 \quad +32 \\ \hline 8x^2 - 40x + 32 &= 0 \\ 8(x^2 - 5x + 4) &= 0 \\ 8(x-4)(x-1) &= 0 \\ x-4 &= 0 \quad x-1 = 0 \\ x &= 4, x = 1 \end{aligned}$$

$$\begin{aligned} 7x^2 + 60x &= -3x - 126 \\ +3x + 126 \quad +3x + 126 \\ \hline 7x^2 + 63x + 126 &= 0 \\ 7(x^2 + 9x + 18) &= 0 \\ 7(x+3)(x+6) &= 0 \\ x+3 &= 0 \quad x+6 = 0 \\ x &= -3, x = -6 \end{aligned}$$

$$\begin{aligned} 10x^2 - 12x - 87 &= 8x - 7 \\ \quad -8x + 7 \quad -8x + 7 \\ \hline 10x^2 - 20x - 80 &= 0 \\ 10(x^2 - 2x - 8) &= 0 \\ 10(x-4)(x+2) &= 0 \\ x-4 &= 0 \quad x+2 = 0 \\ x &= 4, x = -2 \end{aligned}$$