

099 $\int 7.1 \text{ I } \#s 35, 37, 45, 49$

35

$$x^2 + 4x = 12$$

$$x^2 + 4x + 2^2 = 12 + 4$$

$$(x+2)^2 = 16$$

$$x+2 = \pm\sqrt{16} = \pm 4$$

$$x = -2 \pm 4$$

→
→

$$\begin{array}{l} x = 2 \\ \text{OR} \\ x = -6 \end{array}$$

37

$$x^2 + 12x = -27$$

$$x^2 + 12x + 6^2 = -27 + 36$$

$$(x+6)^2 = 9$$

$$x+6 = \pm\sqrt{9} = \pm 3$$

$$x = -6 \pm 3$$

→
→

$$\begin{array}{l} x = -3 \\ \text{OR} \\ x = -9 \end{array}$$

099 8 7.1 I ~~545~~, 49

45

$$2x^2 - 4x - 8 = 0$$

$$x^2 - 2x - 4 = 0$$

$$x^2 - 2x = 4$$

$$x^2 - 2x + 1 = 4 + 1$$

$$(x-1)^2 = 5$$

$$x-1 = \pm\sqrt{5}$$

$$\boxed{x = 1 \pm \sqrt{5}}$$

49

$$4x^2 - 3x + 5 = 0$$

$$x^2 - \frac{3}{4}x + \frac{5}{4} = 0$$

$$x^2 - \frac{3}{4}x = -\frac{5}{4}$$

$$x^2 - \frac{3}{4}x + \left(\frac{3}{8}\right)^2 = -\frac{5}{4} + \frac{9}{64} = -\frac{5}{4} \cdot \frac{16}{16} + \frac{9}{64}$$

$$\left(x - \frac{3}{8}\right)^2 = \frac{-80 + 9}{64} = \frac{-71}{64}$$

$$x - \frac{3}{8} = \pm \sqrt{\frac{-71}{64}} = \pm \frac{i\sqrt{71}}{8}$$

$$\boxed{x = \frac{3 \pm i\sqrt{71}}{8}}$$