

6-4 Quadratic Formula

$$\textcircled{a} 3x^2 - x - 10 = 0$$

$$x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4(3)(-10)}}{2(3)}$$

$$x = \frac{1 \pm \sqrt{1 + 120}}{6}$$

$$x = \frac{1 \pm \sqrt{121}}{6}$$

$$x = \frac{1 \pm 11}{6}$$

$$x = \frac{12}{6}, x = \frac{-10}{6}$$

$$x = 2, x = -\frac{5}{3}$$

$$0 = 6x^2 - 8x - 30$$

$$x = \frac{-(-8) \pm \sqrt{(-8)^2 - 4(6)(-30)}}{2(6)}$$

$$x = \frac{8 \pm \sqrt{64 + 720}}{12}$$

$$x = \frac{8 \pm \sqrt{784}}{12}$$

$$x = \frac{8 \pm 28}{12}$$

$$x = \frac{36}{12}, x = \frac{-20}{12}$$

$$x = 3, x = -\frac{5}{3}$$

$$x^2 - x - 42 = 0$$

$$x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4(1)(-42)}}{2(1)}$$

$$x = \frac{1 \pm \sqrt{1 + 168}}{2}$$

$$x = \frac{1 \pm \sqrt{169}}{2}$$

$$x = \frac{1 \pm 13}{2}$$

$$x = \frac{14}{2}, x = \frac{-12}{2}$$

$$x = 7, x = -6$$

$$\textcircled{b} x^2 + 11x + 30 = 0$$

$$x = \frac{-11 \pm \sqrt{11^2 - 4(1)(30)}}{2(1)}$$

$$x = \frac{-11 \pm \sqrt{121 - 120}}{2}$$

$$x = \frac{-11 \pm \sqrt{1}}{2}$$

$$x = \frac{-11 \pm 1}{2}$$

$$x = \frac{-10}{2}, x = \frac{-12}{2}$$

$$x = -5, x = -6$$

$$0 = x^2 - 2x - 24$$

$$x = \frac{-(-2) \pm \sqrt{(-2)^2 - 4(1)(-24)}}{2(1)}$$

$$x = \frac{2 \pm \sqrt{4 + 96}}{2}$$

$$x = \frac{2 \pm \sqrt{100}}{2}$$

$$x = \frac{2 \pm 10}{2}$$

$$x = \frac{12}{2}, x = \frac{-8}{2}$$

$$x = 6, x = -4$$

$$0 = x^2 + x - 6$$

$$x = \frac{-1 \pm \sqrt{1^2 - 4(1)(-6)}}{2(1)}$$

$$x = \frac{-1 \pm \sqrt{1 + 24}}{2}$$

$$x = \frac{-1 \pm \sqrt{25}}{2}$$

$$x = \frac{-1 \pm 5}{2}$$

$$x = \frac{4}{2}, x = \frac{-6}{2}$$

$$x = 2, x = -3$$