

Pg. 586 (9-21 odd, 29-40 odd)

$$\textcircled{9} 4x^2 + 7x - 15 = 0$$

$$x = \frac{-7 \pm \sqrt{(7)^2 - 4(4)(-15)}}{8}$$

$$x = \frac{-7 \pm \sqrt{49 + 240}}{8}$$

$$x = \frac{-7 \pm \sqrt{289}}{8}$$

$$x = \frac{-7 \pm 17}{8}$$

$$\begin{array}{r} \swarrow \quad \searrow \\ \frac{-7+17}{8} \quad \frac{-7-17}{8} \end{array}$$

$$\frac{10}{8} \approx 1.25 \quad \frac{-24}{8} = -3$$

$$\textcircled{11} 18x^2 - 45x - 50 = 0$$

$a=18 \quad b=-45 \quad c=-50$

$$x = \frac{45 \pm \sqrt{(-45)^2 - 4(18)(-50)}}{2(18)}$$

$$x = \frac{45 \pm \sqrt{2025 + 3600}}{36}$$

$$x = \frac{45 \pm \sqrt{5625}}{36}$$

$$x = \frac{45 \pm 75}{36}$$

$$\swarrow \quad \searrow$$
$$\frac{45+75}{36}$$

$$\frac{120}{36}$$
$$\approx 3.\bar{3}$$

$$\frac{45-75}{36}$$

$$\frac{-30}{36}$$
$$\approx -0.\bar{8}\bar{3}$$

$$(13) 3x^2 + 19x = 154$$

$$3x^2 + 19x - 154 = 0$$

$$a=3 \quad b=19 \quad c=-154$$

$$x = \frac{-19 \pm \sqrt{(19)^2 - 4(3)(-154)}}{2(3)}$$

$$x = \frac{-19 \pm \sqrt{361 + 1848}}{6}$$

$$x = \frac{-19 \pm \sqrt{2209}}{6}$$

$$x = \frac{-19 \pm 47}{6}$$

$$\swarrow \quad \searrow$$
$$\frac{-19 + 47}{6}$$

$$\frac{-19 - 47}{6}$$

$$\frac{28}{6} \approx 4.67$$

$$\frac{-66}{6} \approx -11$$

$$(15) 5x^2 - 47x = 156$$

$$5x^2 - 47x - 156 = 0$$

$$a=5 \quad b=-47 \quad c=-156$$

$$x = \frac{47 \pm \sqrt{(-47)^2 - 4(5)(-156)}}{2(5)}$$

$$x = \frac{47 \pm \sqrt{2209 + 3120}}{10}$$

$$x = \frac{47 \pm \sqrt{5329}}{10}$$

$$x = \frac{47 \pm 73}{10}$$

$$\swarrow \quad \searrow$$

$$x = \frac{47 + 73}{10}$$

$$x = \frac{47 - 73}{10}$$

$$\frac{120}{10}$$

$$\frac{-26}{10}$$

$$x = 12$$

$$x = -2.6$$

$$(17) \quad 5x^2 + 12x - 2 = 0$$
$$a = 5 \quad b = 12 \quad c = -2$$
$$x = \frac{-12 \pm \sqrt{(12)^2 - 4(5)(-2)}}{2(5)}$$

$$x = \frac{-12 \pm \sqrt{144 + 40}}{10}$$

$$x = \frac{-12 \pm \sqrt{184}}{10}$$

$$\swarrow$$
$$\frac{-12 + 13.56}{10}$$

$$\frac{1.56}{10}$$

$$\textcircled{.156}$$

$$\searrow$$
$$\frac{-12 - 13.56}{10}$$

$$\frac{-25.6}{10}$$

$$\textcircled{-2.56}$$

$$(19) \quad 8x^2 - 7x - 5 = 0$$
$$a = 8 \quad b = -7 \quad c = -5$$

$$x = \frac{7 \pm \sqrt{(-7)^2 - 4(8)(-5)}}{2(8)}$$

$$x = \frac{7 \pm \sqrt{49 + 160}}{16}$$

$$x = \frac{7 \pm \sqrt{209}}{16}$$

$$x = \frac{7 \pm 14.5}{16}$$

$$\swarrow$$
$$\frac{7 + 14.5}{16}$$

$$\frac{21.5}{16}$$

$$\textcircled{1.34}$$

$$\searrow$$
$$\frac{7 - 14.5}{16}$$

$$\frac{-7.5}{16}$$

$$\textcircled{-.47}$$

$$\textcircled{21} \quad 3x^2 + 5x = 4$$

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

$$a=3 \quad b=5 \quad c=-4$$

$$x = \frac{-5 \pm \sqrt{(5^2) - 4(3)(-4)}}{2(3)}$$

$$x = \frac{-5 \pm \sqrt{25 + 48}}{6}$$

$$x = \frac{-5 \pm \sqrt{73}}{6}$$

$$x = \frac{-5 \pm 8.54}{6}$$

↙

$$\frac{-5 + 8.54}{6}$$

$$\frac{3.54}{6}$$

$$\textcircled{.59}$$

↘

$$\frac{-5 - 8.54}{6}$$

$$\frac{-13.54}{6}$$

$$\textcircled{-2.26}$$

$$\textcircled{33} \quad x^2 + 2x = 0$$

$$x^2 + 2x + 0 = 0$$

$$b^2 - 4(a)(c)$$

$$(2)^2 - 4(1)(0)$$

$$4 - 0 = 4$$

pos, so 2 solutions

$$\textcircled{35} \quad \frac{3}{3}w^2 = \frac{48}{3}$$

$$\sqrt{w^2} = \sqrt{16}$$

$$w = \sqrt{16}$$

$$\pm 4$$

$$\textcircled{37} \quad 6g^2 - 18 = 0 \quad g = \sqrt{3}$$

$$\frac{6g^2 - 18}{6} = \frac{18}{6} \quad g = \pm 1.73$$

$$g^2 = 3$$

$$\textcircled{29} \quad x^2 - 2x + 3 = 0$$

$$a=1 \quad b=-2 \quad c=3$$

use discriminant

$$b^2 - 4(a)(c)$$

$$(-2)^2 - 4(1)(3)$$

$$4 - 12 = -8$$

negative discriminant =

0 real solutions

$$\textcircled{31} \quad x^2 + 3x + 11 = 0$$

$$b^2 - 4(a)(c)$$

$$(3)^2 - 4(1)(11)$$

$$9 - 44 = -35$$

negative discriminant =

0 real solutions

$$\textcircled{39} \quad k^2 - 4k = -4$$

$$k^2 - 4k + 4 = 0$$

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

$$\textcircled{k=2}$$