

3.8/3.6 CORRIGÉ Devoir 1

OMNIMATHS 11^e

p. 161

$$\begin{aligned}
 21. \quad n^2 + 7n + 12 &= 0 \\
 n^2 + 3n + 4n + 12 &= 0 \\
 n(n+3) + 4(n+3) &= 0 \\
 (n+3)(n+4) &= 0 \\
 n &= -3 \quad n = -4 \\
 \{ -4, -3 \}
 \end{aligned}$$

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

$$\begin{aligned}
 29. \quad 2t^2 + 11t + 5 &= 0 \\
 2t^2 + 10t + t + 5 &= 0 \\
 2t(t+5) + 1(t+5) &= 0 \\
 (t+5)(2t+1) &= 0 \\
 t &= -5 \quad t = -\frac{1}{2} \\
 \{ -5, -\frac{1}{2} \}
 \end{aligned}$$

$$\begin{aligned}
 32. \quad 10y^2 + 16y &= -6 \\
 10y^2 - 16y + 6 &= 0 \\
 \frac{10y^2 - 16y + 6}{2} &= \frac{0}{2} \\
 5y^2 - 8y + 3 &= 0 \\
 5y^2 - 3y - 5y + 3 &= 0 \\
 y(5y-3) - 1(5y-3) &= 0 \\
 (5y-3)(y-1) &= 0 \\
 y = \frac{3}{5} \quad y = 1 \\
 \{ \frac{3}{5}, 1 \}
 \end{aligned}$$

$$\begin{aligned}
 37. \quad 5t^2 - 20t &= 0 \\
 5t(t-4) &= 0 \\
 t &= 0 \quad t = 4 \\
 \{ 0, 4 \}
 \end{aligned}$$

$$\begin{aligned}
 65. \quad k^2 + (k+1)^2 + (k+2)^2 &= 29 \\
 k^2 + k^2 + 2k + 1 + k^2 + 4k + 4 - 29 &= 0 \\
 \frac{3k^2 + 6k - 24}{3} &= \frac{0}{3} \\
 k^2 + 2k - 8 &= 0 \\
 (k+4)(k-2) &= 0 \\
 k &= -4 \quad k = 2 \\
 \{ -4, 2 \}
 \end{aligned}$$

p. 165-166

$$6. \quad y^2 + 12 = 48$$

$$\sqrt{y^2} = \sqrt{36}$$

$$y = \pm 6$$

$$\left\{ -6, +6 \right\}$$

$$12. \quad z = \frac{4+x^2}{10}$$

$$20 = 4+x^2$$

$$\pm\sqrt{16} = \sqrt{x^2}$$

$$x = \pm 4$$

$$\left\{ -4, 4 \right\}$$

$$32. \quad \frac{y^2-3}{4} = \frac{7}{2}$$

$$2y^2-6 = 28$$

$$2y^2 = 34$$

$$\sqrt{y^2} = \sqrt{17}$$

Parcours B: $\left\{ -\sqrt{17}, \sqrt{17} \right\}$

Parcours C: $\left\{ -\sqrt{17}, \sqrt{17} \right\}$

$$33. \quad x^2 = 12$$

$$x = \pm\sqrt{12}$$

$$x = \pm 2\sqrt{3}$$

$$\left\{ -2\sqrt{3}, 2\sqrt{3} \right\}$$

$$44. \quad z - \frac{m^2}{5} = -\frac{1}{4}$$

$$2 + \frac{1}{4} = \frac{m^2}{5}$$

$$\frac{9}{4} = \frac{m^2}{5}$$

$$\pm\sqrt{\frac{45}{4}} = \sqrt{m^2}$$

$$\pm\frac{\sqrt{45}}{2} = m$$

$$m = \pm\frac{3\sqrt{5}}{2}$$

$$\left\{ -\frac{3\sqrt{5}}{2}, \frac{3\sqrt{5}}{2} \right\}$$

$$47. \quad \sqrt{(z+1)^2} = \sqrt{1}$$

$$z+1 = \pm 1$$

$$z = -1 \pm 1$$

$$z=0 \quad z=-2$$

$$\left\{ -2, 0 \right\}$$

$$49. \quad \sqrt{(x+\frac{1}{2})^2} = \sqrt{\frac{1}{4}}$$

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

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

$$x=0 \quad x=-1$$

$$\left\{ -1, 0 \right\}$$

$$57. \quad \sqrt{(3y+2)^2} = \sqrt{0}$$

$$3y+2=0$$

$$y = -\frac{2}{3}$$

$$59. \quad \sqrt{(2k+7)^2} = \sqrt{4}$$

$$2k+7 = \pm 2$$

$$2k = -7 \pm 2$$

$$2k = -5 \quad 2k = -9$$

$$k = -\frac{5}{2} \quad k = -\frac{9}{2}$$

$$\left\{ -\frac{5}{2}, -\frac{9}{2} \right\}$$