

Answers to Exercise 7.4

(1) $(n - 2 - \sqrt{3})(n - 2 + \sqrt{3})$

(2) $(m + 2 - \sqrt{3})(m + 2 + \sqrt{3})$

(3) $(n - 1 - \sqrt{2})(n - 1 + \sqrt{2})$

(4) $(p + 3 - 2\sqrt{2})(p + 3 + 2\sqrt{2})$

(5) $(x - 9)(x + 1)$

(6) $(m - \frac{-5 + \sqrt{5}}{2})(m - \frac{-5 - \sqrt{5}}{2})$

(7) $(n - \frac{7 + 5\sqrt{5}}{2})(n - \frac{7 - 5\sqrt{5}}{2})$

(8) $(a - \frac{-3 + \sqrt{37}}{2})(a - \frac{-3 - \sqrt{37}}{2})$

(9) $(x - \frac{1 + \sqrt{69}}{2})(x - \frac{1 - \sqrt{69}}{2})$

(10) $(x - \frac{-5 + \sqrt{33}}{2})(x - \frac{-5 - \sqrt{33}}{2})$

(11) $2(p - 2)(p + 6)$

(12) $4(x - \frac{3}{2})(x - \frac{1}{2})$

(13) $5(k - \frac{-5 + \sqrt{35}}{5})(k - \frac{-5 - \sqrt{35}}{5})$

(14) $5(a - \frac{-5 + \sqrt{70}}{5})(a - \frac{-5 - \sqrt{70}}{5})$

(15) $3(b - 1 - \sqrt{5})(b - 1 + \sqrt{5})$

(16) $3(m - 4)(m + \frac{2}{3})$

(17) $3(n - \frac{2 + \sqrt{31}}{3})(n - \frac{2 - \sqrt{31}}{3})$

(18) $2(m - \frac{1 + \sqrt{43}}{2})(m - \frac{1 - \sqrt{43}}{2})$

(19) $3(r - \frac{10}{3})(r + 2)$

(20) $5(b - \frac{-9 + \sqrt{41}}{10})(b - \frac{-9 - \sqrt{41}}{10})$

(21) $4(x + \frac{1}{2})(x + 2)$

$$(22) 5\left(k - \frac{-3 + 3\sqrt{6}}{5}\right)\left(k - \frac{-3 - 3\sqrt{6}}{5}\right)$$

$$(23) 2(m - 2)\left(m + \frac{9}{2}\right)$$

$$(24) 5\left(b - \frac{3 + \sqrt{41}}{10}\right)\left(b - \frac{3 - \sqrt{41}}{10}\right)$$

$$(25) 3\left(n - \frac{5 + 2\sqrt{13}}{3}\right)\left(n - \frac{5 - 2\sqrt{13}}{3}\right)$$

Answers to Exercise 7.5

$$(1) \frac{-7 \pm 3\sqrt{13}}{2}$$

$$(2) \frac{-1 \pm \sqrt{77}}{2}$$

$$(3) \frac{-9 \pm \sqrt{33}}{2}$$

$$(4) \frac{5 \pm \sqrt{53}}{2}$$

$$(5) \frac{-3 \pm \sqrt{37}}{2}$$

$$(6) \frac{1 \pm \sqrt{93}}{2}$$

$$(7) \frac{-3 \pm \sqrt{41}}{8}$$

(8) No solution

(9) 3 or $-5/4$

$$(10) \frac{-3 \pm \sqrt{69}}{5}$$

$$(11) \frac{-1 \pm \sqrt{46}}{3}$$

$$(12) \frac{3 \pm \sqrt{21}}{2}$$

$$(13) \frac{-5 \pm \sqrt{10}}{3}$$

$$(14) \frac{2 \pm \sqrt{46}}{3}$$

$$(15) \frac{-3 \pm \sqrt{21}}{2}$$

$$(16) \frac{1 \pm 3\sqrt{5}}{4}$$

$$(17) \frac{-4 \pm 2\sqrt{34}}{5}$$

$$(18) \frac{-3 \pm \sqrt{57}}{8}$$

$$(19) \frac{-5 \pm \sqrt{35}}{2}$$

$$(20) \frac{1 \pm \sqrt{97}}{2}$$

(21) -2 or -7

(22) $6/5$ or -2

$$(23) \frac{-3 \pm \sqrt{101}}{2}$$

$$(24) \frac{-5 \pm \sqrt{13}}{2}$$

$$(25) \frac{-2 \pm 2\sqrt{11}}{5}$$

$$(26) \frac{-3 \pm \sqrt{65}}{2}$$

$$(27) \frac{-1 \pm \sqrt{41}}{2}$$

$$(28) \frac{9 \pm \sqrt{69}}{6}$$

$$(29) \frac{-1 \pm \sqrt{17}}{4}$$

$$(30) \frac{5 \pm \sqrt{69}}{2}$$

$$(31) \frac{5 \pm \sqrt{61}}{2}$$

$$(32) \frac{-9 \pm \sqrt{17}}{2}$$

$$(33) \frac{-5 \pm 5\sqrt{5}}{2}$$

$$(34) \frac{9 \pm 5\sqrt{5}}{2}$$

(35) 1 or -8

(36) 2 or -5

(37) No solution

$$(38) \frac{1 \pm \sqrt{33}}{4}$$

(39) 3 or $-3/4$

(40) 3 or -4

(41) 4 or -1

$$(42) \frac{9 \pm 3\sqrt{13}}{2}$$