Exercise Set I.

Complete the square in:

Exit Acrobat

(I.1) $x^2 - 2x - 1$ Solution

(I.2) $3x^2 + 11x - 4$ Solution

(I.3) $2x^2 + 2x - 1$ Solution

(I.4) $2x^2 + 2x + 1$ Solution

(I.5) $3x^2 - 8x - 4$ Solution

(I.6) $3x^2 + 8x + 7$ Solution

Exercise Set II.

(II.1) $x^2 + 8x + 20$ is to be written in the form $a(x + b)^2 + c$ by completing squares. We must have:

(a) $a =$ (b) $b =$ (c) $c =$ Solution

(II.2) $3x^2 + 12x + 4$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

(a) $a =$ (b) $b =$ (c) $c =$ Solution

(II.3) $x^2 - 6x + 12$ is to be written in the form $a(x - b)^2 + c$ by completing squares. We must have:

(a) $a =$ (b) $b =$ (c) $c =$ Solution

(II.4) $6x^2 + 96x + 375$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

(a) $a =$ (b) $b =$ (c) $c =$ Solution

(II.5) $x^2 + 10x + 33$ is to be written in the form $(x + b)^2 + c$ by completing squares.

We must have: (a) $b =$ (b) $c =$ Solution

(II.6) $7x^2 + 112x + 490$ is to be written in the form $7[(x + b)^2 + c]$ by completing squares.

We must have: (a) $b =$ (b) $c =$ Solution

(II.7) $x^2 + 16x + 70$ is to be written in the form $(x + a)^2 + b$ by completing squares. We must have:

(a) $a =$ (b) $b =$ Solution

(II.8) $5x^2 + 30x + 40$ is to be written in the form $a[(x + b)^2 - c]$ by completing squares. We must have:

(a) $a =$ (b) $b =$ (c) $c =$ Solution

(II.9) $x^2 - 8x + 20$ is to be written in the form $a(x - b)^2 + c$ by completing squares. We must have:

Exit Acrobat

(a) $a =$ (b) $b =$ (c) $c =$ Solution

(II.10) $5x^2 + 50x + 120$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

(a) $a =$ (b) $b =$ (c) $c =$ Solution

(II.11) $2x^2 - 20x + 58$ is to be written in the form $a\left[(x - b)^2 + c^2\right]$ by completing squares. We must have:

(a) $a =$ (b) $b =$ (c) $c =$ Solution

(II.12) $4x^2 + 40x + 96$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

(a) $a =$ (b) $b =$ (c) $c =$ Solution

Exit Acrobat

(II.13) $x^2 + 10x + 32$ is to be written in the form $(x + a)^2 + b$ by completing squares. We must have:

(a) $a =$ (b) $b =$ Solution

(II.14) $9x^2 + 126x + 405$ is to be written in the form $a[(x + b)^2 - c]$ by completing squares. We must have:

(a) $a =$ (b) $b =$ (c) $c =$ Solution

Back to Questions

Solution Set I.

(I.1) Solution:

$x^2 - 2x - 1 =$

Back to Questions

Solution Set I.

(I.1) Solution:

$x^2 - 2x - 1 =$

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

Back to Questions

Solution Set I.

(I.1) Solution:

$x^2 - 2x - 1 =$

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

$[x^2 - 2x(1) + 1^2] - 1 - 1 =$

Back to Questions

Solution Set I.

(I.1) Solution:

$x^2 - 2x - 1 =$

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

$[x^2 - 2x(1) + 1^2] - 1 - 1 =$

$(x - 1)^2 - 2$

(I.2) Solution:

Back to Questions

$3x^2 + 11x - 4 =$

(I.2) Solution:

Back to Questions

$3x^2 + 11x - 4 =$

$3\left(x^2 + \frac{11}{3}x - \frac{4}{3}\right) =$

(I.2) Solution:

Back to Questions

$$3x^2 + 11x - 4 =$$

$$3\left(x^2 + \frac{11}{3}x - \frac{4}{3}\right) =$$

$$3\left(x^2 + 2\left(\frac{1}{2}\right)\left(\frac{11}{3}\right)x - \frac{4}{3}\right) =$$

(I.2) Solution:

Back to Questions

$$3x^2 + 11x - 4 =$$

$$3\left(x^2 + \frac{11}{3}x - \frac{4}{3}\right) =$$

$$3\left(x^2 + 2\left(\frac{1}{2}\right)\left(\frac{11}{3}\right)x - \frac{4}{3}\right) =$$

$$3\left(x^2 + 2\frac{11}{6}x + \left(\frac{11}{6}\right)^2 - \left(\frac{11}{6}\right)^2 - \frac{4}{3}\right) =$$

(I.2) Solution:

Back to Questions

$$3x^2 + 11x - 4 =$$

$$3\left(x^2 + \frac{11}{3}x - \frac{4}{3}\right) =$$

$$3\left(x^2 + 2\left(\frac{1}{2}\right)\left(\frac{11}{3}\right)x - \frac{4}{3}\right) =$$

$$3\left(x^2 + 2\frac{11}{6}x + \left(\frac{11}{6}\right)^2 - \left(\frac{11}{6}\right)^2 - \frac{4}{3}\right) =$$

$$3\left(\left(x + \frac{11}{6}\right)^2 - \frac{121}{36} - \left(\frac{12}{12}\right)\frac{4}{3}\right) =$$

(I.2) Solution:

Back to Questions

$$3x^2 + 11x - 4 =$$

$$3\left(x^2 + \frac{11}{3}x - \frac{4}{3}\right) =$$

$$3\left(x^2 + 2\left(\frac{1}{2}\right)\left(\frac{11}{3}\right)x - \frac{4}{3}\right) =$$

$$3\left(x^2 + 2\frac{11}{6}x + \left(\frac{11}{6}\right)^2 - \left(\frac{11}{6}\right)^2 - \frac{4}{3}\right) =$$

$$3\left(\left(x + \frac{11}{6}\right)^2 - \frac{121}{36} - \left(\frac{12}{12}\right)\frac{4}{3}\right) =$$

$$3\left(\left(x + \frac{11}{6}\right)^2 - \frac{121}{36} - \frac{48}{36}\right) =$$

(I.2) Solution:

Back to Questions

$$3x^2 + 11x - 4 =$$

$$3\left(x^2 + \frac{11}{3}x - \frac{4}{3}\right) =$$

$$3\left(x^2 + 2\left(\frac{1}{2}\right)\left(\frac{11}{3}\right)x - \frac{4}{3}\right) =$$

$$3\left(x^2 + 2\frac{11}{6}x + \left(\frac{11}{6}\right)^2 - \left(\frac{11}{6}\right)^2 - \frac{4}{3}\right) =$$

$$3\left(\left(x + \frac{11}{6}\right)^2 - \frac{121}{36} - \left(\frac{12}{12}\right)\frac{4}{3}\right) =$$

$$3\left(\left(x + \frac{11}{6}\right)^2 - \frac{121}{36} - \frac{48}{36}\right) =$$

$$3\left(\left(x + \frac{11}{6}\right)^2 - \frac{169}{36}\right) =$$

(I.2) Solution:

Back to Questions

$$3x^2 + 11x - 4 =$$

$$3\left(x^2 + \frac{11}{3}x - \frac{4}{3}\right) =$$

$$3\left(x^2 + 2\left(\frac{1}{2}\right)\left(\frac{11}{3}\right)x - \frac{4}{3}\right) =$$

$$3\left(x^2 + 2\frac{11}{6}x + \left(\frac{11}{6}\right)^2 - \left(\frac{11}{6}\right)^2 - \frac{4}{3}\right) =$$

$$3\left(\left(x + \frac{11}{6}\right)^2 - \frac{121}{36} - \left(\frac{12}{12}\right)\frac{4}{3}\right) =$$

$$3\left(\left(x + \frac{11}{6}\right)^2 - \frac{121}{36} - \frac{48}{36}\right) =$$

$$3\left(\left(x + \frac{11}{6}\right)^2 - \frac{169}{36}\right) = 3\left(\left(x + \frac{11}{6}\right)^2 - \left(\frac{13}{6}\right)^2\right)$$

(I.3) Solution:

Back to Questions

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

(I.3) Solution:

Back to Questions

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

$2\left(x^2 + x - \frac{1}{2}\right) =$

(I.3) Solution:

Back to Questions

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

$$2\left(x^2 + x - \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x - \frac{1}{2}\right) =$$

(I.3) Solution:

Back to Questions

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

$$2\left(x^2 + x - \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x - \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x + \left(\frac{1}{2}\right)^2 - \left(\frac{1}{2}\right)^2 - \frac{1}{2}\right) =$$

(I.3) Solution:

Back to Questions

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

$$2\left(x^2 + x - \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x - \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x + \left(\frac{1}{2}\right)^2 - \left(\frac{1}{2}\right)^2 - \frac{1}{2}\right) =$$

$$2\left(\left(x + \frac{1}{2}\right)^2 - \frac{1}{4} - \frac{2}{4}\right) =$$

(I.3) Solution:

Back to Questions

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

$$2\left(x^2 + x - \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x - \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x + \left(\frac{1}{2}\right)^2 - \left(\frac{1}{2}\right)^2 - \frac{1}{2}\right) =$$

$$2\left(\left(x + \frac{1}{2}\right)^2 - \frac{1}{4} - \frac{2}{4}\right) =$$

$$2\left(\left(x + \frac{1}{2}\right)^2 - \frac{3}{4}\right)$$

(I.4) Solution:

Back to Questions

$2x^2 + 2x + 1 =$

(I.4) Solution:

Back to Questions

$2x^2 + 2x + 1 =$

$2\left(x^2 + x + \frac{1}{2}\right) =$

(I.4) Solution:

Back to Questions

$$2x^2 + 2x + 1 =$$

$$2\left(x^2 + x + \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x + \frac{1}{2}\right) =$$

(I.4) Solution:

Back to Questions

$$2x^2 + 2x + 1 =$$

$$2\left(x^2 + x + \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x + \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x + \left(\frac{1}{2}\right)^2 - \left(\frac{1}{2}\right)^2 + \frac{1}{2}\right) =$$

(I.4) Solution:

Back to Questions

$$2x^2 + 2x + 1 =$$

$$2\left(x^2 + x + \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x + \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x + \left(\frac{1}{2}\right)^2 - \left(\frac{1}{2}\right)^2 + \frac{1}{2}\right) =$$

$$2\left(\left(x + \frac{1}{2}\right)^2 - \frac{1}{4} + \frac{2}{4}\right) =$$

(I.4) Solution:

Back to Questions

$$2x^2 + 2x + 1 =$$

$$2\left(x^2 + x + \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x + \frac{1}{2}\right) =$$

$$2\left(x^2 + 2\left(\frac{1}{2}\right)x + \left(\frac{1}{2}\right)^2 - \left(\frac{1}{2}\right)^2 + \frac{1}{2}\right) =$$

$$2\left(\left(x + \frac{1}{2}\right)^2 - \frac{1}{4} + \frac{2}{4}\right) =$$

$$2\left(\left(x + \frac{1}{2}\right)^2 + \frac{1}{4}\right)$$

(I.5) Solution:

Back to Questions

$3x^2 - 8x - 4 =$

(I.5) Solution:

Back to Questions

$3x^2 - 8x - 4 =$

$3\left[x^2 - \frac{8}{3}x - \frac{4}{3}\right] =$

(I.5) Solution:

Back to Questions

$$3x^2 - 8x - 4 =$$

$$3\left[x^2 - \frac{8}{3}x - \frac{4}{3}\right] =$$

$$3\left[x^2 - 2\frac{4}{3}x + \left(\left(\frac{4}{3}\right)^2 - \left(\frac{4}{3}\right)^2\right) - \frac{4}{3}\right] =$$

(I.5) Solution:

Back to Questions

$$3x^2 - 8x - 4 =$$

$$3\left[x^2 - \frac{8}{3}x - \frac{4}{3}\right] =$$

$$3\left[x^2 - 2\frac{4}{3}x + \left(\left(\frac{4}{3}\right)^2 - \left(\frac{4}{3}\right)^2\right) - \frac{4}{3}\right] =$$

$$3\left[\left(x^2 - 2x\frac{4}{3} + \left(\frac{4}{3}\right)^2\right) - \left(\frac{4}{3}\right)^2 - \frac{4}{3}\right] =$$

(I.5) Solution:

Back to Questions

$$3x^2 - 8x - 4 =$$

$$3\left[x^2 - \frac{8}{3}x - \frac{4}{3}\right] =$$

$$3\left[x^2 - 2\frac{4}{3}x + \left(\left(\frac{4}{3}\right)^2 - \left(\frac{4}{3}\right)^2\right) - \frac{4}{3}\right] =$$

$$3\left[\left(x^2 - 2x\frac{4}{3} + \left(\frac{4}{3}\right)^2\right) - \left(\frac{4}{3}\right)^2 - \frac{4}{3}\right] =$$

$$3\left[\left(x - \frac{4}{3}\right)^2 - \frac{16}{9} - \frac{12}{9}\right] =$$

(I.5) Solution:

Back to Questions

$$3x^2 - 8x - 4 =$$

$$3\left[x^2 - \frac{8}{3}x - \frac{4}{3}\right] =$$

$$3\left[x^2 - 2\frac{4}{3}x + \left(\left(\frac{4}{3}\right)^2 - \left(\frac{4}{3}\right)^2\right) - \frac{4}{3}\right] =$$

$$3\left[\left(x^2 - 2x\frac{4}{3} + \left(\frac{4}{3}\right)^2\right) - \left(\frac{4}{3}\right)^2 - \frac{4}{3}\right] =$$

$$3\left[\left(x - \frac{4}{3}\right)^2 - \frac{16}{9} - \frac{12}{9}\right] =$$

$$3\left(x - \frac{4}{3}\right)^2 - \frac{28}{3}$$

(I.6) Solution:

Back to Questions Exit Acrobat

$3x^2 + 8x + 7 =$

(I.6) Solution:

Back to Questions Exit Acrobat

$3x^2 + 8x + 7 =$

$3\left[x^2 + \frac{8}{3}x + \frac{7}{3}\right] =$

(I.6) Solution:

Back to Questions Exit Acrobat

$$3x^2 + 8x + 7 =$$

$$3\left[x^2 + \frac{8}{3}x + \frac{7}{3}\right] =$$

$$3\left[x^2 + 2\frac{4}{3}x + \frac{7}{3}\right] =$$

(I.6) Solution:

Back to Questions Exit Acrobat

$$3x^2 + 8x + 7 =$$

$$3\left[x^2 + \frac{8}{3}x + \frac{7}{3}\right] =$$

$$3\left[x^2 + 2\frac{4}{3}x + \frac{7}{3}\right] =$$

$$3\left[x^2 + 2\frac{4}{3}x + \left(\left(\frac{4}{3}\right)^2 - \left(\frac{4}{3}\right)^2\right) + \frac{7}{3}\right] =$$

(I.6) Solution:

Back to Questions Exit Acrobat

$$3x^2 + 8x + 7 =$$

$$3\left[x^2 + \frac{8}{3}x + \frac{7}{3}\right] =$$

$$3\left[x^2 + 2\frac{4}{3}x + \frac{7}{3}\right] =$$

$$3\left[x^2 + 2\frac{4}{3}x + \left(\left(\frac{4}{3}\right)^2 - \left(\frac{4}{3}\right)^2\right) + \frac{7}{3}\right] =$$

$$3\left[\left(x^2 + 2x\frac{4}{3} + \left(\frac{4}{3}\right)^2\right) - \left(\frac{4}{3}\right)^2 + \frac{7}{3}\right] =$$

(I.6) Solution:

Back to Questions Exit Acrobat

$$3x^2 + 8x + 7 =$$

$$3\left[x^2 + \frac{8}{3}x + \frac{7}{3}\right] =$$

$$3\left[x^2 + 2\frac{4}{3}x + \frac{7}{3}\right] =$$

$$3\left[x^2 + 2\frac{4}{3}x + \left(\left(\frac{4}{3}\right)^2 - \left(\frac{4}{3}\right)^2\right) + \frac{7}{3}\right] =$$

$$3\left[\left(x^2 + 2x\frac{4}{3} + \left(\frac{4}{3}\right)^2\right) - \left(\frac{4}{3}\right)^2 + \frac{7}{3}\right] =$$

$$3\left[\left(x + \frac{4}{3}\right)^2 - \frac{16}{9} + \frac{21}{9}\right] =$$

(I.6) Solution:

Back to Questions Exit Acrobat

$$3x^2 + 8x + 7 =$$

$$3\left[x^2 + \frac{8}{3}x + \frac{7}{3}\right] =$$

$$3\left[x^2 + 2\frac{4}{3}x + \frac{7}{3}\right] =$$

$$3\left[x^2 + 2\frac{4}{3}x + \left(\left(\frac{4}{3}\right)^2 - \left(\frac{4}{3}\right)^2\right) + \frac{7}{3}\right] =$$

$$3\left[\left(x^2 + 2x\frac{4}{3} + \left(\frac{4}{3}\right)^2\right) - \left(\frac{4}{3}\right)^2 + \frac{7}{3}\right] =$$

$$3\left[\left(x + \frac{4}{3}\right)^2 - \frac{16}{9} + \frac{21}{9}\right] =$$

$$3\left(x + \frac{4}{3}\right)^2 + \frac{5}{3}$$

Solution Set II.

Back to Questions Exit Acrobat

(II.1) Solution:

$x^2 + 8x + 20$ is to be written in the form $a(x + b)^2 + c$ by completing squares. We must have:

Solution: $x^2 + 8x + 20 =$

Solution Set II.

Back to Questions Exit Acrobat

(II.1) Solution:

$x^2 + 8x + 20$ is to be written in the form $a(x + b)^2 + c$ by completing squares. We must have:

Solution: $x^2 + 8x + 20 =$

$x^2 + 2(4)x + \left(4^2 - 4^2\right) + 20 =$

Solution Set II.

Back to Questions Exit Acrobat

(II.1) Solution:

$x^2 + 8x + 20$ is to be written in the form $a(x + b)^2 + c$ by completing squares. We must have:

Solution: $x^2 + 8x + 20 =$

$$x^2 + 2(4)x + \left(4^2 - 4^2\right) + 20 =$$

$$\left(x^2 + 2(4)x + 4^2\right) - 16 + 20 =$$

Solution Set II.

Back to Questions Exit Acrobat

(II.1) Solution:

$x^2 + 8x + 20$ is to be written in the form $a(x + b)^2 + c$ by completing squares. We must have:

Solution: $x^2 + 8x + 20 =$

$x^2 + 2(4)x + \left(4^2 - 4^2\right) + 20 =$

$\left(x^2 + 2(4)x + 4^2\right) - 16 + 20 =$

$(x + 4)^2 + 4 =$

Solution Set II.

Back to Questions Exit Acrobat

(II.1) Solution:

$x^2 + 8x + 20$ is to be written in the form $a(x + b)^2 + c$ by completing squares. We must have:

Solution: $x^2 + 8x + 20 =$

$x^2 + 2(4)x + \left(4^2 - 4^2\right) + 20 =$

$\left(x^2 + 2(4)x + 4^2\right) - 16 + 20 =$

$(x + 4)^2 + 4 =$

$(1)(x + 4)^2 + 4$

(a) $a =$

Solution Set II.

Back to Questions Exit Acrobat

(II.1) Solution:

$x^2 + 8x + 20$ is to be written in the form $a(x + b)^2 + c$ by completing squares. We must have:

Solution: $x^2 + 8x + 20 =$

$x^2 + 2(4)x + \left(4^2 - 4^2\right) + 20 =$

$\left(x^2 + 2(4)x + 4^2\right) - 16 + 20 =$

$(x + 4)^2 + 4 =$

$(1)(x + 4)^2 + 4$

(a) $a =$ 1 (b) $b =$

Solution Set II.

Back to Questions Exit Acrobat

(II.1) Solution:

$x^2 + 8x + 20$ is to be written in the form $a(x + b)^2 + c$ by completing squares. We must have:

Solution: $x^2 + 8x + 20 =$

$x^2 + 2(4)x + \left(4^2 - 4^2\right) + 20 =$

$\left(x^2 + 2(4)x + 4^2\right) - 16 + 20 =$

$(x + 4)^2 + 4 =$

$(1)(x + 4)^2 + 4$

(a) $a =$ 1 (b) $b =$ 4 (c) $c =$

Solution Set II.

Back to Questions Exit Acrobat

(II.1) Solution:

$x^2 + 8x + 20$ is to be written in the form $a(x + b)^2 + c$ by completing squares. We must have:

Solution: $x^2 + 8x + 20 =$

$x^2 + 2(4)x + \left(4^2 - 4^2\right) + 20 =$

$\left(x^2 + 2(4)x + 4^2\right) - 16 + 20 =$

$(x + 4)^2 + 4 =$

$(1)(x + 4)^2 + 4$

(a) $a =$ 1 (b) $b =$ 4 (c) $c =$ 4

Back to Questions Exit Acrobat

(II.2) Solution:

$3x^2 + 12x + 4$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

Solution: $3x^2 + 12x + 4 = 3\left(x^2 + 4x + \frac{4}{3}\right) =$

Back to Questions Exit Acrobat

(II.2) Solution:

$3x^2 + 12x + 4$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

Solution: $3x^2 + 12x + 4 = 3\left(x^2 + 4x + \frac{4}{3}\right) = 3\left(x^2 + 2(2)x + 2^2 - 2^2 + \frac{4}{3}\right) =$

Back to Questions Exit Acrobat

(II.2) Solution:

$3x^2 + 12x + 4$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

Solution: $3x^2 + 12x + 4 = 3\left(x^2 + 4x + \frac{4}{3}\right) = 3\left(x^2 + 2(2)x + 2^2 - 2^2 + \frac{4}{3}\right) =$

$3\left((x + 2)^2 - 4 + \frac{4}{3}\right) =$

Back to Questions Exit Acrobat

(II.2) Solution:

$3x^2 + 12x + 4$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

Solution: $3x^2 + 12x + 4 = 3\left(x^2 + 4x + \frac{4}{3}\right) = 3\left(x^2 + 2(2)x + 2^2 - 2^2 + \frac{4}{3}\right) =$

$3\left((x + 2)^2 - 4 + \frac{4}{3}\right) =$

Back to Questions Exit Acrobat

(II.2) Solution:

$3x^2 + 12x + 4$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

Solution: $3x^2 + 12x + 4 = 3\left(x^2 + 4x + \frac{4}{3}\right) = 3\left(x^2 + 2(2)x + 2^2 - 2^2 + \frac{4}{3}\right) =$

$3\left((x + 2)^2 - 4 + \frac{4}{3}\right) = 3\left((x + 2)^2 - \frac{12}{3} + \frac{4}{3}\right) =$

Back to Questions Exit Acrobat

(II.2) Solution:

$3x^2 + 12x + 4$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

Solution: $3x^2 + 12x + 4 = 3\left(x^2 + 4x + \frac{4}{3}\right) = 3\left(x^2 + 2(2)x + 2^2 - 2^2 + \frac{4}{3}\right) =$

$3\left((x + 2)^2 - 4 + \frac{4}{3}\right) = 3\left((x + 2)^2 - \frac{12}{3} + \frac{4}{3}\right) = 3\left((x + 2)^2 - \frac{8}{3}\right) =$

Back to Questions Exit Acrobat

(II.2) Solution:

$3x^2 + 12x + 4$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

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$3\left((x + 2)^2 - 4 + \frac{4}{3}\right) = 3\left((x + 2)^2 - \frac{12}{3} + \frac{4}{3}\right) = 3\left((x + 2)^2 - \frac{8}{3}\right) =$

$3(x + 2)^2 - 3\frac{8}{3} = 3(x + 2)^2 - 8$

(7) $a =$

Back to Questions Exit Acrobat

(II.2) Solution:

$3x^2 + 12x + 4$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

Solution: $3x^2 + 12x + 4 = 3\left(x^2 + 4x + \frac{4}{3}\right) = 3\left(x^2 + 2(2)x + 2^2 - 2^2 + \frac{4}{3}\right) =$

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$3(x + 2)^2 - 3\frac{8}{3} = 3(x + 2)^2 - 8$

(7) $a =$ 3 (8) $b =$

Back to Questions Exit Acrobat

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$3x^2 + 12x + 4$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

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$3(x + 2)^2 - 3\frac{8}{3} = 3(x + 2)^2 - 8$

(7) $a =$ 3 (8) $b =$ 2 (9) $c =$

Back to Questions Exit Acrobat

(II.2) Solution:

$3x^2 + 12x + 4$ is to be written in the form $a(x + b)^2 - c$ by completing squares. We must have:

Solution: $3x^2 + 12x + 4 = 3\left(x^2 + 4x + \frac{4}{3}\right) = 3\left(x^2 + 2(2)x + 2^2 - 2^2 + \frac{4}{3}\right) =$

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$3(x + 2)^2 - 3\frac{8}{3} = 3(x + 2)^2 - 8$

(7) $a =$ 3 (8) $b =$ 2 (9) $c =$ 8

(II.3)

Back to Questions Exit Acrobat

Solution: $x^2 - 6x + 12 =$

(II.3)

Back to Questions Exit Acrobat

Solution: $x^2 - 6x + 12 =$

$x^2 - 2(3)x + (3^2 - 3^2) + 12 =$

(II.3)

Back to Questions Exit Acrobat

Solution: $x^2 - 6x + 12 =$

$x^2 - 2(3)x + (3^2 - 3^2) + 12 =$

$(x^2 - 2(3)x + 3^2) - 9 + 12 =$

(II.3)

Back to Questions Exit Acrobat

Solution: $x^2 - 6x + 12 =$

$x^2 - 2(3)x + (3^2 - 3^2) + 12 =$

$(x^2 - 2(3)x + 3^2) - 9 + 12 =$

$(x - 3)^2 + 3 =$

(II.3)

Back to Questions Exit Acrobat

Solution: $x^2 - 6x + 12 =$

$x^2 - 2(3)x + (3^2 - 3^2) + 12 =$

$(x^2 - 2(3)x + 3^2) - 9 + 12 =$

$(x - 3)^2 + 3 =$

$(1)(x - 3)^2 + 3$, so

(a) $a =$

(II.3)

Back to Questions Exit Acrobat

Solution: $x^2 - 6x + 12 =$

$x^2 - 2(3)x + (3^2 - 3^2) + 12 =$

$(x^2 - 2(3)x + 3^2) - 9 + 12 =$

$(x - 3)^2 + 3 =$

$(1)(x - 3)^2 + 3$, so

(a) $a =$ 1 (b) $b =$

(II.3)

Back to Questions Exit Acrobat

Solution: $x^2 - 6x + 12 =$

$x^2 - 2(3)x + (3^2 - 3^2) + 12 =$

$(x^2 - 2(3)x + 3^2) - 9 + 12 =$

$(x - 3)^2 + 3 =$

$(1)(x - 3)^2 + 3$, so

(a) $a =$ 1 (b) $b =$ 3 (c) $c =$

(II.3)

Back to Questions Exit Acrobat

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$x^2 - 2(3)x + (3^2 - 3^2) + 12 =$

$(x^2 - 2(3)x + 3^2) - 9 + 12 =$

$(x - 3)^2 + 3 =$

$(1)(x - 3)^2 + 3$, so

(a) $a =$ 1 (b) $b =$ 3 (c) $c =$ 3

(II.4)

Back to Questions Exit Acrobat

Solution:

$6x^2 + 96x + 375 =$

(II.4)

Back to Questions Exit Acrobat

Solution:

$6x^2 + 96x + 375 =$

$6\left(x^2 + 16x + \frac{125}{2}\right) =$

(II.4)

Back to Questions Exit Acrobat

Solution:

$6x^2 + 96x + 375 =$

$6\left(x^2 + 16x + \frac{125}{2}\right) =$

$6\left(x^2 + 2(8)x + (8)^2 - (8)^2 + \frac{125}{2}\right) =$

(II.4)

Back to Questions Exit Acrobat

Solution:

$6x^2 + 96x + 375 =$

$6\left(x^2 + 16x + \frac{125}{2}\right) =$

$6\left(x^2 + 2(8)x + (8)^2 - (8)^2 + \frac{125}{2}\right) =$

$6\left((x+8)^2 - 64 + \frac{125}{2}\right) =$

(II.4)

Back to Questions Exit Acrobat

Solution:

$6x^2 + 96x + 375 =$

$6\left(x^2 + 16x + \frac{125}{2}\right) =$

$6\left(x^2 + 2(8)x + (8)^2 - (8)^2 + \frac{125}{2}\right) =$

$6\left((x+8)^2 - 64 + \frac{125}{2}\right) =$

$6\left((x+8)^2 - \frac{128}{2} + \frac{125}{2}\right) =$

(II.4)

Back to Questions Exit Acrobat

Solution:

$$6x^2 + 96x + 375 =$$

$$6\left(x^2 + 16x + \frac{125}{2}\right) =$$

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$$6\left((x+8)^2 - 64 + \frac{125}{2}\right) =$$

$$6\left((x+8)^2 - \frac{128}{2} + \frac{125}{2}\right) =$$

$$6(x+8)^2 - 6\frac{128-125}{2} =$$

(II.4)

Back to Questions Exit Acrobat

Solution:

$$6x^2 + 96x + 375 =$$

$$6\left(x^2 + 16x + \frac{125}{2}\right) =$$

$$6\left(x^2 + 2(8)x + (8)^2 - (8)^2 + \frac{125}{2}\right) =$$

$$6\left((x+8)^2 - 64 + \frac{125}{2}\right) =$$

$$6\left((x+8)^2 - \frac{128}{2} + \frac{125}{2}\right) =$$

$$6(x+8)^2 - 6\frac{128-125}{2} =$$

$$6(x+8)^2 - 6\frac{3}{2} =$$

(II.4)

Back to Questions Exit Acrobat

Solution:

$6x^2 + 96x + 375 =$

$6\left(x^2 + 16x + \frac{125}{2}\right) =$

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$6(x+8)^2 - 6\frac{128-125}{2} =$

$6(x+8)^2 - 6\frac{3}{2} =$

$6(x+8)^2 - 9$

(a) $a =$

(II.4)

Back to Questions Exit Acrobat

Solution:

$6x^2 + 96x + 375 =$

$6\left(x^2 + 16x + \frac{125}{2}\right) =$

$6\left(x^2 + 2(8)x + (8)^2 - (8)^2 + \frac{125}{2}\right) =$

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$6(x+8)^2 - 6\frac{128-125}{2} =$

$6(x+8)^2 - 6\frac{3}{2} =$

$6(x+8)^2 - 9$

(a) $a =$ 6 (b) $b =$

(II.4)

Back to Questions Exit Acrobat

Solution:

$6x^2 + 96x + 375 =$

$6\left(x^2 + 16x + \frac{125}{2}\right) =$

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$6(x+8)^2 - 6\frac{128-125}{2} =$

$6(x+8)^2 - 6\frac{3}{2} =$

$6(x+8)^2 - 9$

(a) $a =$ 6 (b) $b =$ 8 (c) $c =$

(II.4)

Back to Questions Exit Acrobat

Solution:

$6x^2 + 96x + 375 =$

$6\left(x^2 + 16x + \frac{125}{2}\right) =$

$6\left(x^2 + 2(8)x + (8)^2 - (8)^2 + \frac{125}{2}\right) =$

$6\left((x+8)^2 - 64 + \frac{125}{2}\right) =$

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$6(x+8)^2 - 6\frac{128-125}{2} =$

$6(x+8)^2 - 6\frac{3}{2} =$

$6(x+8)^2 - 9$

(a) $a =$ 6 (b) $b =$ 8 (c) $c =$ 9

Back to Questions Exit Acrobat

(II.5)

Solution:

$x^2 + 10x + 33 =$

Back to Questions Exit Acrobat

(II.5)

Solution:

$x^2 + 10x + 33 =$

$x^2 + 2(5)x + (5^2 - 5^2) + 33 =$

Back to Questions Exit Acrobat

(II.5)

Solution:

$x^2 + 10x + 33 =$

$x^2 + 2(5)x + (5^2 - 5^2) + 33 =$

$(x^2 + 2(5)x + 5^2) - 25 + 33 =$

Back to Questions Exit Acrobat

(II.5)

Solution:

$x^2 + 10x + 33 =$

$x^2 + 2(5)x + (5^2 - 5^2) + 33 =$

$(x^2 + 2(5)x + 5^2) - 25 + 33 =$

$(x + 5)^2 + 8$, so (a) $b =$

Back to Questions Exit Acrobat

(II.5)

Solution:

$x^2 + 10x + 33 =$

$x^2 + 2(5)x + (5^2 - 5^2) + 33 =$

$(x^2 + 2(5)x + 5^2) - 25 + 33 =$

$(x + 5)^2 + 8$, so (a) $b =$ 5 (b) $c =$

Back to Questions Exit Acrobat

(II.5)

Solution:

$x^2 + 10x + 33 =$

$x^2 + 2(5)x + (5^2 - 5^2) + 33 =$

$(x^2 + 2(5)x + 5^2) - 25 + 33 =$

$(x + 5)^2 + 8$, so (a) $b =$ 5 (b) $c =$ 8

(II.6)

Back to Questions Exit Acrobat

Solution:

(II.6)

Back to Questions Exit Acrobat

Solution: $7x^2 + 112x + 490 =$

(II.6)

Back to Questions Exit Acrobat

Solution: $7x^2 + 112x + 490 =$

$7\left[x^2 + 16x + 70\right] =$

(II.6)

Back to Questions Exit Acrobat

Solution: $7x^2 + 112x + 490 =$

$7\left[x^2 + 16x + 70\right] =$

$7\left[x^2 + 2(8)x + 70\right] =$

(II.6)

Back to Questions Exit Acrobat

Solution: $7x^2 + 112x + 490 =$

$7\left[x^2 + 16x + 70\right] =$

$7\left[x^2 + 2(8)x + 70\right] =$

$7\left[x^2 + 2(8)x + (8^2 - 8^2) + 70\right] =$

(II.6)

Back to Questions Exit Acrobat

Solution: $7x^2 + 112x + 490 =$

$7\left[x^2 + 16x + 70\right] =$

$7\left[x^2 + 2(8)x + 70\right] =$

$7\left[x^2 + 2(8)x + (8^2 - 8^2) + 70\right] =$

$7\left[(x^2 + 2(8)x + 8^2) - 64 + 70\right] =$

(II.6)

Back to Questions Exit Acrobat

Solution: $7x^2 + 112x + 490 =$

$7\left[x^2 + 16x + 70\right] =$

$7\left[x^2 + 2(8)x + 70\right] =$

$7\left[x^2 + 2(8)x + (8^2 - 8^2) + 70\right] =$

$7\left[(x^2 + 2(8)x + 8^2) - 64 + 70\right] =$

$7[(x + 8)^2 + 6]$, so (a) $b =$

(II.6)

Back to Questions Exit Acrobat

Solution: $7x^2 + 112x + 490 =$

$7\left[x^2 + 16x + 70\right] =$

$7\left[x^2 + 2(8)x + 70\right] =$

$7\left[x^2 + 2(8)x + (8^2 - 8^2) + 70\right] =$

$7\left[(x^2 + 2(8)x + 8^2) - 64 + 70\right] =$

$7[(x + 8)^2 + 6]$, so (a) $b =$ 8 (b) $c =$

(II.6)

Back to Questions Exit Acrobat

Solution: $7x^2 + 112x + 490 =$

$7\,[x^2 + 16x + 70] =$

$7\,[x^2 + 2(8)x + 70] =$

$7\,[x^2 + 2(8)x + (8^2 - 8^2) + 70] =$

$7\,[(x^2 + 2(8)x + 8^2) - 64 + 70] =$

$7[(x + 8)^2 + 6]$, so (a) $b =$ 8 (b) $c =$ 6

(II.7)

Back to Questions Exit Acrobat

Solution:

$x^2 + 16x + 70 =$

(II.7)

Back to Questions Exit Acrobat

Solution:

$x^2 + 16x + 70 =$

$x^2 + 2\frac{16}{2}x + 70 =$

(II.7)

Back to Questions Exit Acrobat

Solution:

$x^2 + 16x + 70 =$

$x^2 + 2\frac{16}{2}x + 70 =$

$x^2 + 2(8)x + \left(8^2 - 8^2\right) + 70 =$

(II.7)

Back to Questions Exit Acrobat

Solution:

$$x^2 + 16x + 70 =$$

$$x^2 + 2\frac{16}{2}x + 70 =$$

$$x^2 + 2(8)x + \left(8^2 - 8^2\right) + 70 =$$

$$\left(x^2 + 2(8)x + 8^2\right) - 64 + 70 =$$

(II.7)

Back to Questions Exit Acrobat

Solution:

$x^2 + 16x + 70 =$

$x^2 + 2\frac{16}{2}x + 70 =$

$x^2 + 2(8)x + \left(8^2 - 8^2\right) + 70 =$

$\left(x^2 + 2(8)x + 8^2\right) - 64 + 70 =$

$(x + 8)^2 + 6$, so (a) $a =$

(II.7)

Back to Questions Exit Acrobat

Solution:

$x^2 + 16x + 70 =$

$x^2 + 2\frac{16}{2}x + 70 =$

$x^2 + 2(8)x + \left(8^2 - 8^2\right) + 70 =$

$\left(x^2 + 2(8)x + 8^2\right) - 64 + 70 =$

$(x + 8)^2 + 6$, so (a) $a =$ 8 (b) $b =$

(II.7)

Back to Questions Exit Acrobat

Solution:

$x^2 + 16x + 70 =$

$x^2 + 2\frac{16}{2}x + 70 =$

$x^2 + 2(8)x + \left(8^2 - 8^2\right) + 70 =$

$\left(x^2 + 2(8)x + 8^2\right) - 64 + 70 =$

$(x + 8)^2 + 6$, so (a) $a =$ 8 (b) $b =$ 6

(II.8)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 30x + 40 =$

(II.8)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 30x + 40 =$

$5[x^2 + 6x + 8] =$

(II.8)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 30x + 40 =$

$5[x^2 + 6x + 8] =$

$5[x^2 + 2(3)x + \left(3^2 - 3^2\right) + 8] =$

(II.8)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 30x + 40 =$

$5[x^2 + 6x + 8] =$

$5[x^2 + 2(3)x + \left(3^2 - 3^2\right) + 8] =$

$5[(x + 3)^2 - 9 + 8] =$

(II.8)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 30x + 40 =$

$5[x^2 + 6x + 8] =$

$5[x^2 + 2(3)x + \left(3^2 - 3^2\right) + 8] =$

$5[(x + 3)^2 - 9 + 8] =$

$5[(x + 3)^2 - 1]$

(a) $a =$

(II.8)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 30x + 40 =$

$5[x^2 + 6x + 8] =$

$5[x^2 + 2(3)x + \left(3^2 - 3^2\right) + 8] =$

$5[(x + 3)^2 - 9 + 8] =$

$5[(x + 3)^2 - 1]$

(a) $a =$ 5 (b) $b =$

(II.8)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 30x + 40 =$

$5[x^2 + 6x + 8] =$

$5[x^2 + 2(3)x + \left(3^2 - 3^2\right) + 8] =$

$5[(x + 3)^2 - 9 + 8] =$

$5[(x + 3)^2 - 1]$

(a) $a =$ 5 (b) $b =$ 3 (c) $c =$

(II.8)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 30x + 40 =$

$5[x^2 + 6x + 8] =$

$5[x^2 + 2(3)x + \left(3^2 - 3^2\right) + 8] =$

$5[(x + 3)^2 - 9 + 8] =$

$5[(x + 3)^2 - 1]$

(a) $a =$ 5 (b) $b =$ 3 (c) $c =$ 1

Back to Questions Exit Acrobat

(II.9)

Solution:

$x^2 - 8x + 20 =$

Back to Questions Exit Acrobat

(II.9)

Solution:

$x^2 - 8x + 20 =$

$x^2 - 2 \cdot 4x + (4^2 - 4^2) + 20 =$

Back to Questions Exit Acrobat

(II.9)

Solution:

$x^2 - 8x + 20 =$

$x^2 - 2 \cdot 4x + (4^2 - 4^2) + 20 =$

$(x^2 - 2 \cdot 4x + 4^2) - 16 + 20 =$

Back to Questions Exit Acrobat

(II.9)

Solution:

$x^2 - 8x + 20 =$

$x^2 - 2 \cdot 4x + (4^2 - 4^2) + 20 =$

$(x^2 - 2 \cdot 4x + 4^2) - 16 + 20 =$

(1) $\left[(x-4)^2 + 4\right]$, so (a) $a =$

Back to Questions Exit Acrobat

(II.9)

Solution:

$x^2 - 8x + 20 =$

$x^2 - 2 \cdot 4x + (4^2 - 4^2) + 20 =$

$(x^2 - 2 \cdot 4x + 4^2) - 16 + 20 =$

(1) $\left[(x-4)^2 + 4\right]$, so (a) $a =$ 1 (b) $b =$

Back to Questions Exit Acrobat

(II.9)

Solution:

$x^2 - 8x + 20 =$

$x^2 - 2 \cdot 4x + (4^2 - 4^2) + 20 =$

$(x^2 - 2 \cdot 4x + 4^2) - 16 + 20 =$

(1) $\left[(x-4)^2 + 4\right]$, so (a) $a =$ 1 (b) $b =$ 4 (c) $c =$

Back to Questions Exit Acrobat

(II.9)

Solution:

$x^2 - 8x + 20 =$

$x^2 - 2 \cdot 4x + (4^2 - 4^2) + 20 =$

$(x^2 - 2 \cdot 4x + 4^2) - 16 + 20 =$

(1) $\left[(x-4)^2 + 4\right]$, so (a) $a =$ 1 (b) $b =$ 4 (c) $c =$ 4

(II.10)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 50x + 120 =$

(II.10)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 50x + 120 =$

$5(x^2 + 10x + 24) =$

(II.10)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 50x + 120 =$

$5(x^2 + 10x + 24) =$

$5\left[x^2 + 2\frac{10}{2}x + 24\right] =$

(II.10)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 50x + 120 =$

$5(x^2 + 10x + 24) =$

$5\left[x^2 + 2\frac{10}{2}x + 24\right] =$

$5\left[x^2 + 2 \cdot 5x + 24\right] =$

(II.10)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 50x + 120 =$

$5(x^2 + 10x + 24) =$

$5\left[x^2 + 2\frac{10}{2}x + 24\right] =$

$5\left[x^2 + 2 \cdot 5x + 24\right] =$

$5\left[x^2 + 2 \cdot 5x + (5^2 - 5^2) + 24\right] =$

(II.10)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 50x + 120 =$

$5(x^2 + 10x + 24) =$

$5\left[x^2 + 2\frac{10}{2}x + 24\right] =$

$5\left[x^2 + 2 \cdot 5x + 24\right] =$

$5\left[x^2 + 2 \cdot 5x + (5^2 - 5^2) + 24\right] =$

$5\left[(x^2 + 2 \cdot 5x + 5^2) - 25 + 24\right] =$

(II.10)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 50x + 120 =$

$5(x^2 + 10x + 24) =$

$5\left[x^2 + 2\frac{10}{2}x + 24\right] =$

$5\left[x^2 + 2 \cdot 5x + 24\right] =$

$5\left[x^2 + 2 \cdot 5x + (5^2 - 5^2) + 24\right] =$

$5\left[(x^2 + 2 \cdot 5x + 5^2) - 25 + 24\right] =$

$5\left[(x + 5)^2 - 1\right] =$

(II.10)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 50x + 120 =$

$5(x^2 + 10x + 24) =$

$5\left[x^2 + 2\frac{10}{2}x + 24\right] =$

$5\left[x^2 + 2 \cdot 5x + 24\right] =$

$5\left[x^2 + 2 \cdot 5x + (5^2 - 5^2) + 24\right] =$

$5\left[(x^2 + 2 \cdot 5x + 5^2) - 25 + 24\right] =$

$5\left[(x + 5)^2 - 1\right] =$

$5(x + 5)^2 - 5$, so (a) $a =$

(II.10)

Back to Questions Exit Acrobat

Solution:

$5x^2 + 50x + 120 =$

$5(x^2 + 10x + 24) =$

$5\left[x^2 + 2\frac{10}{2}x + 24\right] =$

$5\left[x^2 + 2 \cdot 5x + 24\right] =$

$5\left[x^2 + 2 \cdot 5x + (5^2 - 5^2) + 24\right] =$

$5\left[(x^2 + 2 \cdot 5x + 5^2) - 25 + 24\right] =$

$5\left[(x + 5)^2 - 1\right] =$

$5(x + 5)^2 - 5$, so (a) $a =$ 5 (b) $b =$

(II.10)

Back to Questions Exit Acrobat

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Back to Questions Exit Acrobat

Solution:

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$5(x + 5)^2 - 5$, so (a) $a =$ 5 (b) $b =$ 5 (c) $c =$ 5

Back to Questions Exit Acrobat

(II.11)

Solution: $2x^2 - 20x + 58 =$

Back to Questions Exit Acrobat

(II.11)

Solution: $2x^2 - 20x + 58 =$

$2\left[x^2 - 10x + 29\right] =$

Back to Questions Exit Acrobat

(II.11)

Solution: $2x^2 - 20x + 58 =$

$2\left[x^2 - 10x + 29\right] =$

$2\left[x^2 - 2(5)x + \left(5^2 - 5^2\right) + 29\right] =$

Back to Questions Exit Acrobat

(II.11)

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$2\left[x^2 - 10x + 29\right] =$

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Back to Questions Exit Acrobat

(II.11)

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$2\left[(x-5)^2 + 4\right]$, so (a) $a =$

Back to Questions Exit Acrobat

(II.11)

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Back to Questions Exit Acrobat

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Back to Questions Exit Acrobat

(II.11)

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Back to Questions Exit Acrobat

(II.12)

Solution:

$4x^2 + 40x + 96 =$

Back to Questions Exit Acrobat

(II.12)

Solution:

$4x^2 + 40x + 96 =$

$4\left[x^2 + 10x + 24\right] =$

Back to Questions Exit Acrobat

(II.12)

Solution:

$4x^2 + 40x + 96 =$

$4\left[x^2 + 10x + 24\right] =$

$4\left[x^2 + 2(5)x + \left(5^2 - 5^2\right) + 24\right] =$

Back to Questions Exit Acrobat

(II.12)

Solution:

$$4x^2 + 40x + 96 =$$

$$4\left[x^2 + 10x + 24\right] =$$

$$4\left[x^2 + 2(5)x + \left(5^2 - 5^2\right) + 24\right] =$$

$$4\left[\left(x^2 + 2(5)x + 5^2\right) - 25 + 24\right] =$$

Back to Questions Exit Acrobat

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$4\left[(x+5)^2 - 1\right] =$

(a) $a =$

Back to Questions Exit Acrobat

(II.12)

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$4x^2 + 40x + 96 =$

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Back to Questions Exit Acrobat

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Back to Questions Exit Acrobat

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$4\left[(x+5)^2 - 1\right] =$

(a) $a =$ 4 (b) $b =$ 5 (c) $c =$ 1

Back to Questions Exit Acrobat

(II.13)

Solution:

$x^2 + 10x + 32 =$

Back to Questions Exit Acrobat

(II.13)

Solution:

$x^2 + 10x + 32 =$

$x^2 + 2\frac{10}{2}x + \left(\frac{10}{2}\right)^2 - \left(\frac{10}{2}\right)^2 + 32 =$

Back to Questions Exit Acrobat

(II.13)

Solution:

$$x^2 + 10x + 32 =$$

$$x^2 + 2\frac{10}{2}x + \left(\frac{10}{2}\right)^2 - \left(\frac{10}{2}\right)^2 + 32 =$$

$$x^2 + 2(5)x + \left(5^2 - 5^2\right) + 32 =$$

Back to Questions Exit Acrobat

(II.13)

Solution:

$x^2 + 10x + 32 =$

$x^2 + 2\frac{10}{2}x + \left(\frac{10}{2}\right)^2 - \left(\frac{10}{2}\right)^2 + 32 =$

$x^2 + 2(5)x + \left(5^2 - 5^2\right) + 32 =$

$(x + 5)^2 + 7$, so (a) $a =$

Back to Questions Exit Acrobat

(II.13)

Solution:

$x^2 + 10x + 32 =$

$x^2 + 2\frac{10}{2}x + \left(\frac{10}{2}\right)^2 - \left(\frac{10}{2}\right)^2 + 32 =$

$x^2 + 2(5)x + \left(5^2 - 5^2\right) + 32 =$

$(x + 5)^2 + 7$, so (a) $a =$ 5 (b) $b =$

Back to Questions Exit Acrobat

(II.13)

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$x^2 + 10x + 32 =$

$x^2 + 2\frac{10}{2}x + \left(\frac{10}{2}\right)^2 - \left(\frac{10}{2}\right)^2 + 32 =$

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$(x + 5)^2 + 7$, so (a) $a =$ 5 (b) $b =$ 7

(II.14)

Back to Questions

SolutionBoxSolution:

$9x^2 + 126x + 405 =$

(II.14)

Back to Questions

SolutionBoxSolution:

$9x^2 + 126x + 405 =$

$9[x^2 + 14x + 45] =$

(II.14)

Back to Questions

SolutionBoxSolution:

$9x^2 + 126x + 405 =$

$9[x^2 + 14x + 45] =$

$9\left[x^2 + 2\frac{14}{2}x + 7^2 - 7^2 + 45\right] =$

(II.14)

Back to Questions

SolutionBoxSolution:

$9x^2 + 126x + 405 =$

$9[x^2 + 14x + 45] =$

$9\left[x^2 + 2\frac{14}{2}x + 7^2 - 7^2 + 45\right] =$

$9\left[(x + 7)^2 - 49 + 45\right] =$

(II.14)

Back to Questions

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$9x^2 + 126x + 405 =$

$9[x^2 + 14x + 45] =$

$9\left[x^2 + 2\frac{14}{2}x + 7^2 - 7^2 + 45\right] =$

$9\left[(x+7)^2 - 49 + 45\right] =$

$9\left[(x+7)^2 - 4\right]$

(a) $a =$

(II.14)

Back to Questions

SolutionBoxSolution:

$9x^2 + 126x + 405 =$

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$9\left[(x+7)^2 - 49 + 45\right] =$

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(a) $a =$ 9 (b) $b =$

(II.14)

Back to Questions

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(a) $a =$ 9 (b) $b =$ 7 (c) $c =$

(II.14)

Back to Questions

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(a) $a =$ 9 (b) $b =$ 7 (c) $c =$ 4