

Factorization

1

(a) Factorise $x^2 - 5x + 6$.

(b) Given that $x = 4$ is a solution of the equation $x^2 + 3x + c = 0$, find the value of c .

Answer (a) [1]

(b) c = [1]

2

(a) On a journey, a cyclist travelled 1 kilometre in x minutes.
On a second journey, the cyclist travelled for y hours at the same average speed as on the first journey.
Find an expression, in terms of x and y , for the number of kilometres he travelled on the second journey.

Answer (a) km [1]

3

(a) Factorise $x^2 - 7x + 12$.

(b) Solve $(x + 1)(3x - 2) = 0$.

Answer (a) [1]

(b) x = OR [1]

Factorization

4

(a) Expand and simplify $(x - 1)(x^2 + x + 1)$.

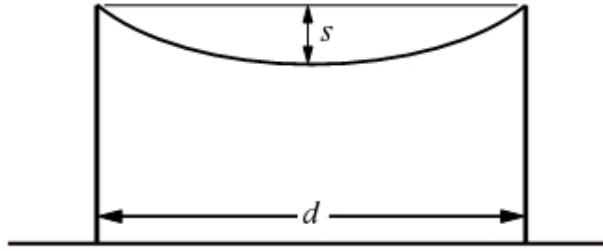
(b) Factorise $ax - bx - 3ay + 3by$.

Answer (a)..... [2]

(b)..... [2]

Factorization

5



Two vertical posts of the same height stand on horizontal ground.
The distance between the posts is d centimetres.

When a wire of length w centimetres is suspended between the posts, the sag in the middle is s centimetres.

The sag is given by the formula $s = \sqrt{\frac{3d(w-d)}{8}}$.

(a) Find s when $d = 800$ and $w = 803$.

(b) Express w in terms of d and s .

Answer (a) $s = \dots\dots\dots [1]$

(b) $w = \dots\dots\dots [3]$

Factorization

6

(a) (i) Factorise $ax - bx$.

(ii) Hence evaluate $1426 \times 0.6789 - 426 \times 0.6789$.

(b) Solve the equation

$$3(x - 5) - 2 = 7 - (1 - x).$$

Answer (a)(i) [1]

(ii) [1]

(b) $x =$ [2]

7

(a) Simplify $(3x^3)^2$.

(b) Given that $(16)^{-\frac{1}{2}} \times k = 1$, evaluate k .

Answer (a) [1]

(b) $k =$ [1]

Factorization

8

Express as a single fraction in its simplest form $\frac{2}{x-3} - \frac{1}{x+2}$.

Answer [2]

9

It is given that $x = -3.5$, $y = 1.5$ and $z = 4.5$.

(a) Find the value of $x - z$.

(b) Given also that $(y + z) : t = 4 : 15$, find the value of t .

Answer (a) $x - z =$ [1]

(b) $t =$ [2]

Factorization

10

Solve the equation $\frac{4}{x+3} = \frac{x-1}{3}$.

Answer [3]