Enough Information

You are told that

$$ab = 245$$
$$bc = 635$$
$$a + c = 88$$

What is the value of b?

Hints available on the next slide

Enough Information Hints

You are told that

$$ab = 245$$
$$bc = 635$$
$$a + c = 88$$

What is the value of b?

- Try adding the first two expressions together
- Now factorise
- Have another look at the question

Enough Information Solution

You are told that

$$ab = 245$$

$$bc = 635$$

$$a + c = 88$$

What is the value of b?

$$ab + bc = 245 + 635$$

$$b(a + c) = 880$$

$$b(88) = 880$$

$$b = 10$$

Square Root

By considering prime factors, and without a calculator, find the square root of 27×147

Hints available on the next slide

Square Root Hints

By considering prime factors, and without a calculator, find the square root of 27×147

- Draw prime factor trees for 27 and 147 separately
- Write down 27 x 147 expressed as a product of their prime factors
- Simplify the expression
- Have another look at the question

Square Root Solution

By considering prime factors, and without a calculator, find the square root of 27×147

$27 = 3^3$

$147 = 3 \times 7^2$

Therefore $27 \times 147 = 3^3 \times 3 \times 7^2 = 3^4 \times 7^2$

$$\sqrt{27 \times 147} = \sqrt{3^4 \times 7^2} = \sqrt{3^4} \times \sqrt{7^2} = 3^2 \times 7 = 63$$

The Root Cause

Simplify $\sqrt{2y^2(x+3)^2+7(x+3)^2y^2}$

Hint available on the next slide

The Root Cause Hint

Simplify $\sqrt{2y^2(x+3)^2+7(x+3)^2y^2}$

- Factorise first (Q7 and Q8 from Factorising 1 will help)
- Have another look at the question

The Root Cause Solution

Simplify $\sqrt{2y^2(x+3)^2+7(x+3)^2y^2}$

The common factor is $(x+3)^2$

$$\sqrt{2y^2(x+3)^2+7(x+3)^2y^2}$$

$$=\sqrt{(x+3)^2(2y^2+7y^2)}$$

$$=\sqrt{9y^2(x+3)^2}$$

$$=3y(x+3)$$

Power Puzzle

Simplify

$$\frac{4x^{2.5} - 6\sqrt{x}}{2x^2 - 3}$$

Hints available on the next slide

Power Puzzle Hint

Simplify

$$\frac{4x^{2.5} - 6\sqrt{x}}{2x^2 - 3}$$

- Rewrite $\sqrt{x}$ as a power of x
- What is 2.5 as a fraction?
- Factorise the numerator
- Have another look at the question

Power Puzzle Solution

Simplify

$$\frac{4x^{2.5} - 6\sqrt{x}}{2x^2 - 3}$$

$$= \frac{4x^{2.5} - 6x^{0.5}}{2x^2 - 3}$$

$$= \frac{2x^{0.5}(2x^2 - 3)}{2x^2 - 3} = 2x^{0.5} = 2\sqrt{x}$$