

Worked Examples - Reverse calculations

A preschooler was told to make a basic figure of a “man” by cutting and pasting a triangle (for the hat), circle (for the face) and rectangle (for the body), as shown alongside:

- Determine the base of the triangle, given that the perimeter of the triangle is 25 cm. Use the formula:

Perimeter = side₁ + side₂ + base

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$25 = 9 + 6 + \text{base}$

$25 = 15 + \text{base}$

$25 - 15 = \text{base}$

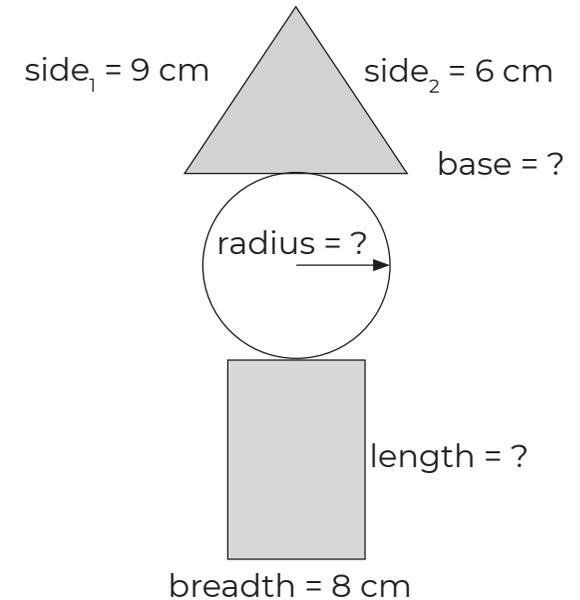
$10 \text{ cm} = \text{base}$

... substitute

... simplify first!

... opposite operation

... simplify & add units



Keep variables on the given side!

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2. Calculate the length of the man’s body, if the area of the rectangular body is 96 cm^2 . Use the formula:

$$\text{Area} = \text{length} \times \text{breadth}$$

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$$96 = \text{length} \times 8$$

$$96 \div 8 = \text{length}$$

$$12 \text{ cm} = \text{length}$$

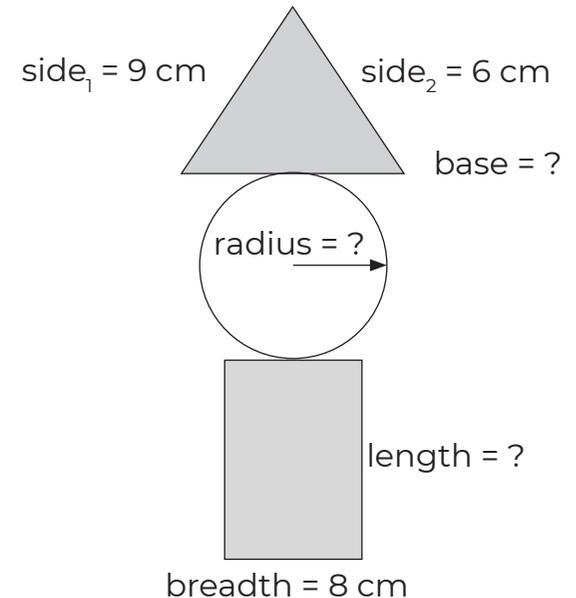
... substitute

... opposite operation

... simplify & add units

$$2 \times \leftrightarrow \div$$

Keep
variables on
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3. Determine the radius of the man’s face, if the area is 78,55 cm².
Use the formula:

Area = $\pi \times \text{radius}^2$; where $\pi = 3,142$

$Area = \pi \times \text{radius}^2$

$78,55 = 3,142 \times \text{radius}^2$

$78,55 \div 3,142 = \text{radius}^2$

$25 = \text{radius}^2$

$\sqrt{25} = \text{radius}$

$5 \text{ cm} = \text{radius}$

... substitute incl. π

... opposite operation

... simplify

... opposite operation

... simplify & add units

3 $x^2 \leftrightarrow \sqrt{x}$
Square \leftrightarrow Square-root

