

AREA & PERIMETER: REVERSE CALCULATIONS

Best Guess Mastery Worksheet (Target Grade 4/5)

I Do

A rectangle has an area of 42 cm^2 .

The length of the rectangle is 7 cm .

Work out the perimeter of the rectangle.

We Do

A rectangle has an area of 54 cm^2 .

The width of the rectangle is 6 cm .

Work out the perimeter of the rectangle.

AREA & PERIMETER: REVERSE CALCULATIONS**Best Guess Mastery Worksheet (Target Grade 4/5)****You Do 1**

A rectangle has an area of 96 cm^2 .

The length of the rectangle is 12 cm .

Work out the perimeter of the rectangle.

You Do 2

A rectangle has a perimeter of 34 cm .

The width of the rectangle is 5 cm .

Work out the area of the rectangle.

AREA & PERIMETER: REVERSE CALCULATIONS**Best Guess Mastery Worksheet (Target Grade 4/5)****Challenge 1**

- (a) A triangle has an area of 40 cm^2 . Its base is 10 cm. Work out its perpendicular height.
- (b) A parallelogram has an area of 72 cm^2 . Its perpendicular height is 8 cm. Work out the length of its base.

Challenge 2

- (a) A trapezium has an area of 60 cm^2 . Its parallel sides are 7 cm and 8 cm long. Work out its perpendicular height.
- (b) A circle has an area of 113.04 cm^2 . Work out the radius of the circle.
(Use $\pi = 3.14$)

AREA & PERIMETER: REVERSE CALCULATIONS**Best Guess Mastery Worksheet (Target Grade 4/5)****Practice Perfect (1)**

- (a) A rectangle has an area of 100 cm^2 and a length of 20 cm. Work out its perimeter.
- (b) A rectangle has a perimeter of 40 cm and a length of 15 cm. Work out its area.

Practice Perfect (2)

- (a) A triangle has an area of 24 cm^2 and a perpendicular height of 6 cm. Work out its base length.
- (b) A circle has a circumference of 31.4 cm. Work out its diameter.
(Use $\pi = 3.14$)

Answers & Worked Solutions

I Do:

$$\text{Width} = \text{Area} \div \text{Length} = 42 \div 7 = 6 \text{ cm.}$$

$$\text{Perimeter} = 2 \times (7 + 6) = 2 \times 13 = \mathbf{26 \text{ cm}}$$

We Do:

$$\text{Length} = \text{Area} \div \text{Width} = 54 \div 6 = 9 \text{ cm.}$$

$$\text{Perimeter} = 2 \times (9 + 6) = 2 \times 15 = \mathbf{30 \text{ cm}}$$

You Do 1:

$$\text{Width} = 96 \div 12 = 8 \text{ cm.}$$

$$\text{Perimeter} = 2 \times (12 + 8) = 2 \times 20 = \mathbf{40 \text{ cm}}$$

You Do 2:

$$\text{Two widths} = 5 + 5 = 10 \text{ cm.}$$

$$\text{Two lengths} = 34 - 10 = 24 \text{ cm} \rightarrow \text{Length} = 12 \text{ cm.}$$

$$\text{Area} = 12 \times 5 = \mathbf{60 \text{ cm}^2}$$

Challenge 1:

$$\text{(a) Triangle Area} = \frac{1}{2} \times \text{base} \times \text{height} \rightarrow 40 = \frac{1}{2} \times 10 \times h \rightarrow 40 = 5h \rightarrow \mathbf{h = 8 \text{ cm}}$$

$$\text{(b) Parallelogram Area} = \text{base} \times \text{height} \rightarrow 72 = b \times 8 \rightarrow \mathbf{b = 9 \text{ cm}}$$

Challenge 2:

$$\text{(a) Trapezium Area} = \frac{1}{2} \times (a + b) \times h \rightarrow 60 = \frac{1}{2} \times (7 + 8) \times h \rightarrow 60 = 7.5h \rightarrow \mathbf{h = 8 \text{ cm}}$$

$$\text{(b) Circle Area} = \pi \times r^2 \rightarrow 113.04 = 3.14 \times r^2 \rightarrow r^2 = 113.04 \div 3.14 = 36 \rightarrow \mathbf{r = 6 \text{ cm}}$$

Practice Perfect (1):

$$\text{(a) Width} = 100 \div 20 = 5 \text{ cm. Perimeter} = 2 \times (20 + 5) = \mathbf{50 \text{ cm}}$$

$$\text{(b) Two lengths} = 30 \text{ cm. Two widths} = 40 - 30 = 10 \text{ cm} \rightarrow \text{Width} = 5 \text{ cm. Area} = 15 \times 5 = \mathbf{75 \text{ cm}^2}$$

Practice Perfect (2):

$$\text{(a) Triangle Area} = \frac{1}{2} \times \text{base} \times \text{height} \rightarrow 24 = \frac{1}{2} \times b \times 6 \rightarrow 24 = 3b \rightarrow \mathbf{b = 8 \text{ cm}}$$

$$\text{(b) Circle Circumference} = \pi \times d \rightarrow 31.4 = 3.14 \times d \rightarrow d = 31.4 \div 3.14 \rightarrow \mathbf{d = 10 \text{ cm}}$$