Push Tasks — Answers

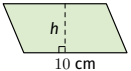
1. A parallelogram has area 96 cm^2 and base 12 cm. Find its perpendicular height.

Solution

$h = A \div b$

$= 96 \div 12 = 8$ cm

2. This parallelogram has area 85 cm^2. Find h.



Solution

$h = A \div b$

$= 85 \div 10 = 8.5$ cm

3. A triangle has area 60 cm^2 and base 15 cm. Find its perpendicular height.

Solution

$h = 2A \div b$

$= (2 \times 60) \div 15 = 8$ cm

4. A kite has area 60 cm^2. One diagonal is 15 cm. Find the other diagonal.

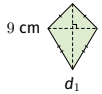
Solution

$d_2 = 2A \div d_1$

$= (2 \times 60) \div 15 = 8$ cm

Push Tasks — Answers

5. This kite has area 54 cm^2. Find d_1.



Solution

$d_1 = 2A \div d_2$

$= (2 \times 54) \div 9 = 12$ cm

6. A square has area 121 cm^2. Find its side length.

Solution

$s = \sqrt{A}$

$= \sqrt{121} = 11$ cm

7. A square has side 6 cm and a rectangle has sides 4 cm and 9 cm. Explain why these two shapes have the same area even though they look different.

Solution

Square $= 36$ cm^2; Rectangle $= 36$ cm^2 — same product.

8. A triangle and a parallelogram share the same base of 10 cm and the same perpendicular height of 6 cm. Use the area formulas to explain how their areas compare.

Solution

Parallelogram $= 60$ cm^2; Triangle $= 30$ cm^2 (half)

Push Tasks — Answers

9. A parallelogram has base b and height h. If the base is doubled and the height is halved, what happens to the area? Justify your answer using the area formula.

Solution

$(2b)(h \div 2) = bh$ – area unchanged

10. A kite's diagonals are in the ratio $3 : 2$. The longer diagonal is 18 cm. Find the area of the kite.

Solution

Shorter diagonal $= 18 \times \frac{2}{3} = 12$ cm

$A = \frac{1}{2} \times 18 \times 12 = 108$ cm^2

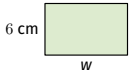
11. A rectangle has area 108 cm^2 and length 12 cm. Find its width.

Solution

$w = A \div l$

$= 108 \div 12 = 9$ cm

12. This rectangle has area 54 cm^2. Find w.



Solution

$w = A \div 6$

$= 54 \div 6 = 9$ cm