



## Area (Trapeziums, Rhombuses & Kites)

### Finding the Area

The area of a shape is the amount of space inside it.  
It can be found through area formulas.

When measuring area, we use **square units**.  
Square units measure the space inside a shape.

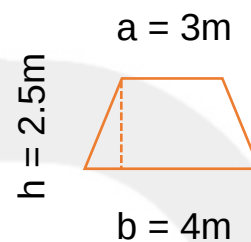
#### Area of a Trapezium

$$A = \frac{a + b}{2} \times \text{Height}$$

where  $a$  = top,  $b$  = base

**EXAMPLE:**  $A = \frac{3 + 4}{2} \times 2.5 = 8.75\text{m}^2$

There are 8.75 (1m by 1m) squares inside.



#### Area of a Rhombus

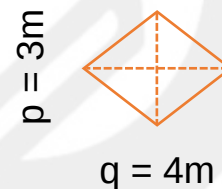
$$A = \frac{p \times q}{2}$$

where  $p$  = diagonal 1,  $q$  = diagonal 2

Note: All sides of a rhombus are equal

**EXAMPLE:**  $A = \frac{3 + 4}{2} = 3.5\text{m}^2$

There are 3.5 (1m by 1m) squares inside.



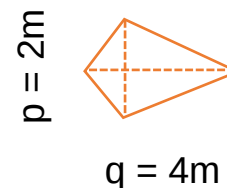
#### Area of a Kites

$$A = \frac{p \times q}{2}$$

where  $p$  = diagonal 1,  $q$  = diagonal 2

**EXAMPLE:**  $A = \frac{2 + 4}{2} = 4\text{m}^2$

There are 4 (1m by 1m) squares inside.

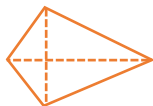




**Instructions:** Find the area of the shapes below (round to two decimals).

1

$$p = 3.21\text{m}$$



$$q = 5.95\text{m}$$

2

$$p = 11.84\text{cm}$$



$$q = 20.53\text{cm}$$

3

$$a = 3.8\text{m}$$

$$h = 3.75\text{m}$$



$$b = 5.28\text{m}$$

4

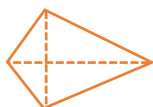
$$p = 2.59\text{cm}$$



$$q = 1.12\text{cm}$$

5

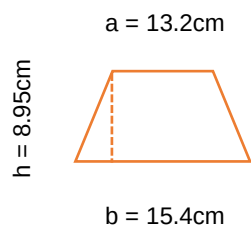
$$p = 12.39\text{mm}$$



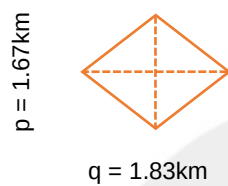
$$q = 16.8\text{mm}$$



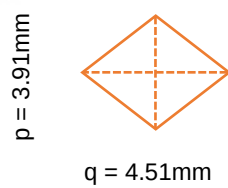
6



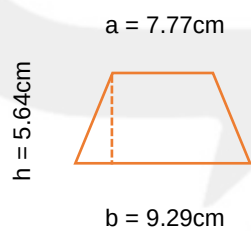
7



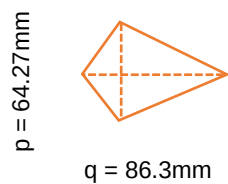
8



9



10





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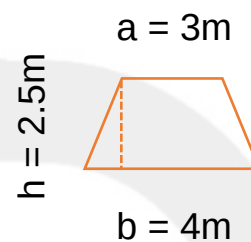
#### Area of a Trapezium

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where  $a$  = top,  $b$  = base

**EXAMPLE:**  $A = \frac{3 + 4}{2} \times 2.5 = 8.75\text{m}^2$

There are 8.75 (1m by 1m) squares inside.



#### Area of a Rhombus

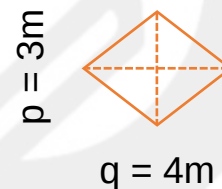
$$A = \frac{p \times q}{2}$$

where  $p$  = diagonal 1,  $q$  = diagonal 2

Note: All sides of a rhombus are equal

**EXAMPLE:**  $A = \frac{3 + 4}{2} = 3.5\text{m}^2$

There are 3.5 (1m by 1m) squares inside.



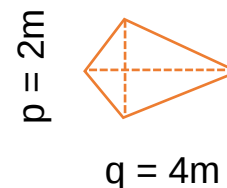
#### Area of a Kites

$$A = \frac{p \times q}{2}$$

where  $p$  = diagonal 1,  $q$  = diagonal 2

**EXAMPLE:**  $A = \frac{2 + 4}{2} = 4\text{m}^2$

There are 4 (1m by 1m) squares inside.

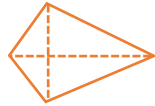




**Instructions:** Find the area of the shapes below (round to two decimals).

1

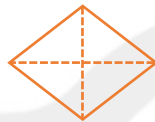
$$p = 2.99\text{cm}$$



$$q = 4.28\text{cm}$$

2

$$p = 6.54\text{km}$$



$$q = 9.3\text{km}$$

3

$$a = 2.1\text{m}$$

$$h = 3.22\text{m}$$



$$b = 4.85\text{m}$$

4

$$a = 6.76\text{mm}$$

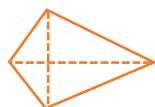
$$h = 6.2\text{mm}$$



$$b = 9.53\text{mm}$$

5

$$p = 4.38\text{mm}$$

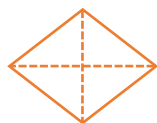


$$q = 8.66\text{mm}$$



6

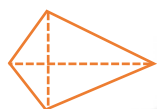
$$p = 15.23\text{km}$$



$$q = 16.9\text{km}$$

7

$$p = 69.98\text{cm}$$



$$q = 80.3\text{cm}$$

8

$$a = 8.81\text{m}$$

$$h = 7.5\text{m}$$



$$b = 12.34\text{m}$$

9

$$p = 2.99\text{cm}$$



$$q = 4.01\text{cm}$$

10

$$a = 13.85\text{km}$$

$$h = 9.09\text{km}$$



$$b = 20.2\text{km}$$