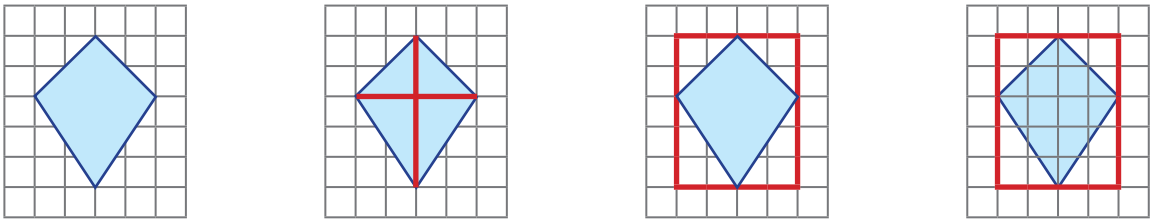
The Kite and Rhombus

The kite and the rhombus share the same property: that the diagonals cross at right angles.
It is this property that leads to the formula for the area of the shapes.



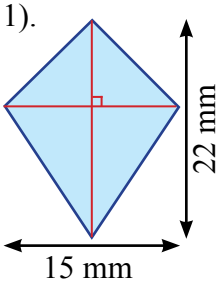
Draw a kite on squared paper. Draw in the diagonals. Move the diagonals to the edge of the kite to form a rectangle around the kite. The rectangle has the same length and width as the diagonals of the kite. Therefore the area of the rectangle is *the product of the diagonals*. By counting squares you can see the kite is half the area of the rectangle.

> The area of the kite is half the product of the diagonals.

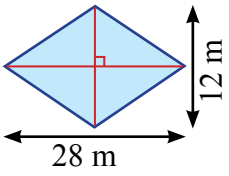
Draw a rhombus on squared paper to show that this is true for a rhombus.

A. Find the area of the following kites and rhombuses. (Diagrams not to scale).

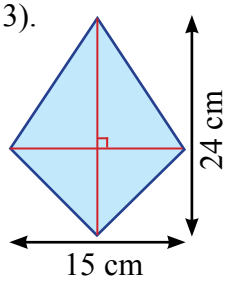
1).



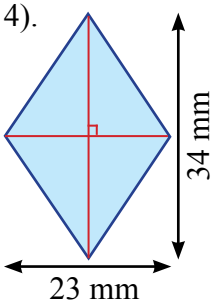
2).



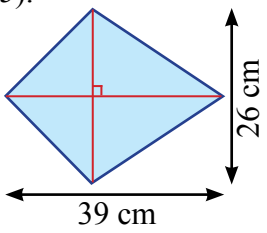
3).



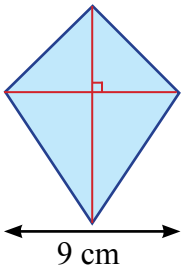
4).



5).



Example: Find the missing diagonal length in the kite.



Area of kite = half the product of the diagonals

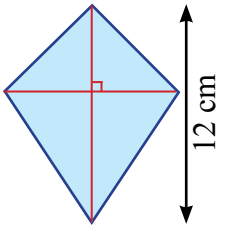
$45 = \frac{1}{2} \times 9 \times x$ where x is the missing diagonal

$45 = 4.5 \times x$ (Divide both sides by 4.5)

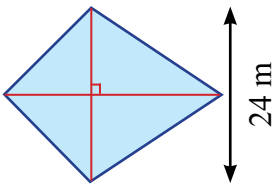
$x =$ 10 cm

B. Find the missing diagonal lengths in the following kites and rhombuses. (Diagrams not to scale).

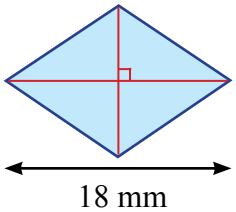
1). Area = 42 cm²



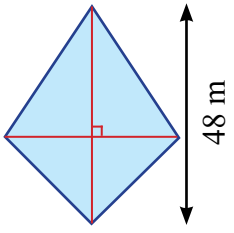
2). Area = 432 m²



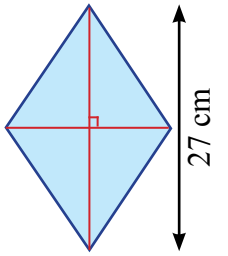
3). Area = 126 mm²



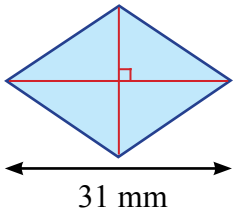
4). Area = 768 m²



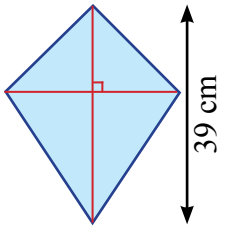
5). Area = 243 cm²



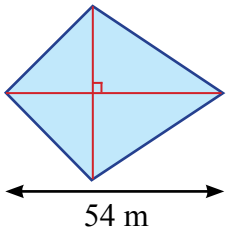
6). Area = 248 mm²



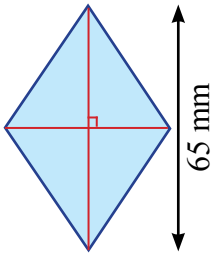
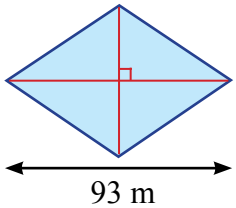
7). Area = 429 cm²



8). Area = 891 m²



9). Area = 1365 mm²



10). Area = 2976 m²