Name: _____ Date: _____

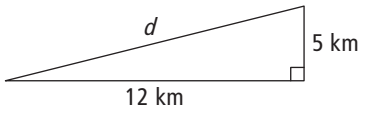
3.5 Applying the Pythagorean Relationship

***MathLinks 8,* pages 106–111**

Key Ideas Review

Use the diagrams provided to complete the equations for #1.

1. a)



$d^2 = 12^2 +$ _____

$d^2 =$ _____ + _____

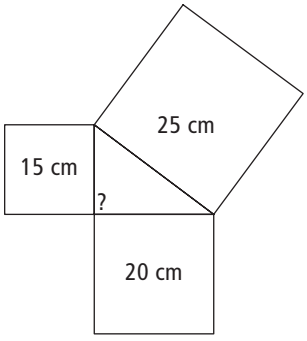
$d^2 =$ _____

$d = \sqrt{}$ _____

$d =$ _____

The hypotenuse is _____ km long.

b)



_____ + _____ = _____

Left side: _____ + _____

= _____ + _____

= _____

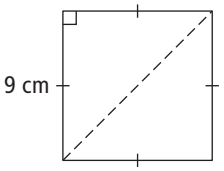
Right side: _____ = _____

Are both sides equal?
YES _____ NO _____

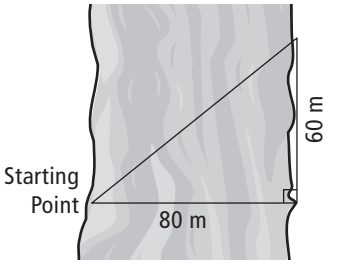
Is this a right triangle?
YES _____ NO _____

Practise and Apply

2. What is the length of the diagonal of a square whose sides measure 9 cm? Give the answer to the nearest tenth of a centimetre. Show your work.

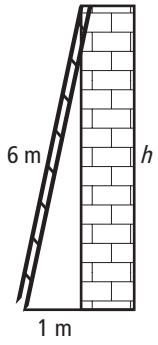


3. Aden decides to swim across a river that is 80 m wide. As he begins to swim the current carries him 60 m downstream. How far did he actually swim?

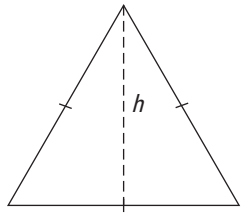


Name: _____ **Date:** _____

4. The foot of a ladder is 1 m from a wall. If the ladder is 6 m long, how far up the wall does the ladder reach? Give the answer to the nearest tenth of a metre. Show your work.

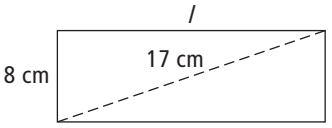


5. The perimeter of an equilateral triangle is 24 cm.



Calculate the height of the triangle to the nearest tenth of a centimetre. Show your work.

6. The width of a rectangle is 8 cm, and its diagonal is 17 cm.



a) Calculate the length of the rectangle. Show your work.

b) Calculate the area of the rectangle. Show your work.

7. A quadrilateral has a width of 17 cm and a length of 26 cm. A diagonal is 31 cm. Is the quadrilateral a rectangle? Justify your answer.

8. A ship leaves port heading due west. After travelling at a speed of 20 km/h for 10 h, the ship makes a 90° turn and heads south, travelling at the same speed. After travelling south for $7\frac{1}{2}$ h, how far is the ship from the port? Show your work.