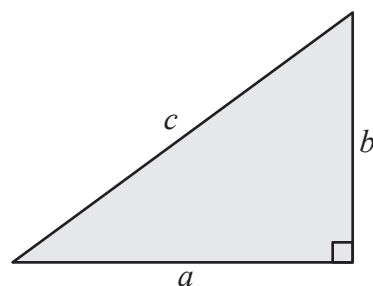
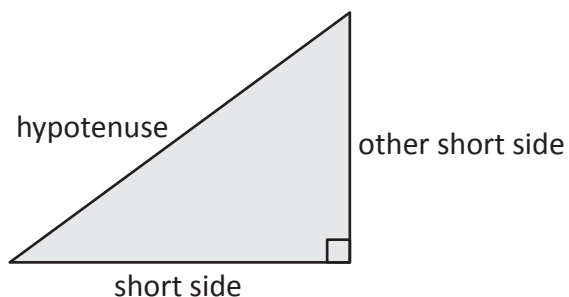


Pythagoras' Theorem for right-angled triangles

The squares and right-angled triangles section showed that a relationship exists between the side lengths of right-angled triangles. This relationship is called Pythagoras' Theorem.



$$(\text{short side})^2 + (\text{other short side})^2 = (\text{longest side})^2$$

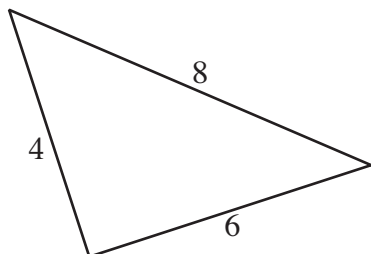
↑
always the hypotenuse

$$a^2 + b^2 = c^2$$

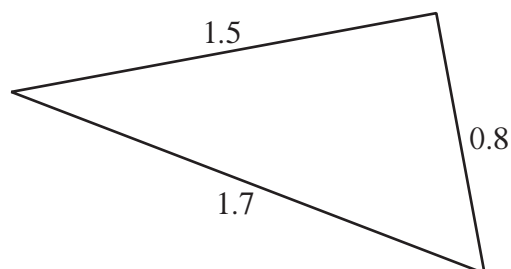
If the rule does not work, then it is not a right-angled triangle.

Use Pythagoras' Theorem to determine which of the following triangles are right-angled or not.

(i)



(ii)



Substitute lengths into Pythagoras' Theorem

$$(\text{short side})^2 + (\text{other short side})^2 = (\text{longest side})^2$$

$$4^2 + 6^2 = 8^2$$

$$16 + 36 = 64$$

$$52 \neq 64$$

$\therefore$ **not** a right-angled triangle

$$0.8^2 + 1.5^2 = 1.7^2$$

$$0.64 + 2.25 = 2.89$$

$$2.89 = 2.89$$

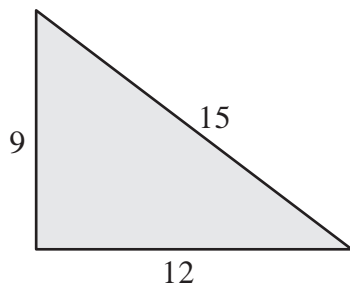
$\therefore$ **is** a right-angled triangle



Pythagoras' Theorem for right-angled triangles

1 Use Pythagoras' Theorem to calculate which of the following triangles are right-angled or not.

a

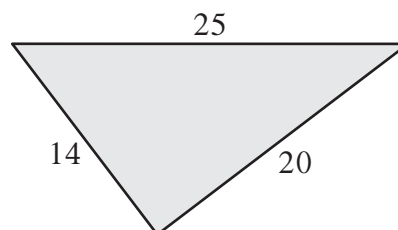

☐

Right-angled

☐

Not right-angled

b

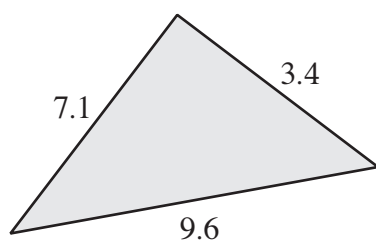

☐

Right-angled

☐

Not right-angled

c

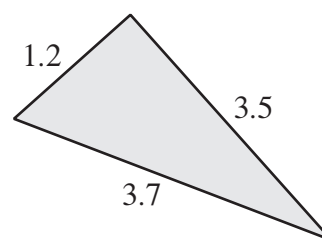

☐

Right-angled

☐

Not right-angled

d

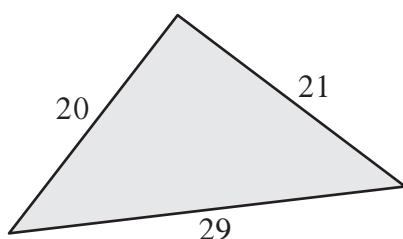

☐

Right-angled

☐

Not right-angled

e

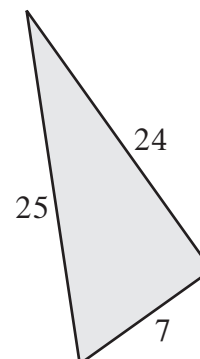

☐

Right-angled

☐

Not right-angled

f


☐

Right-angled

☐

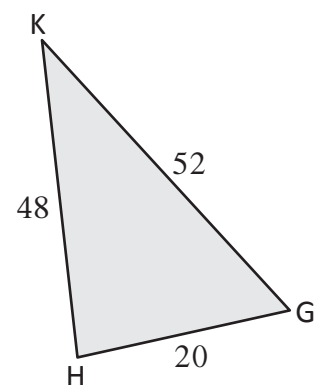
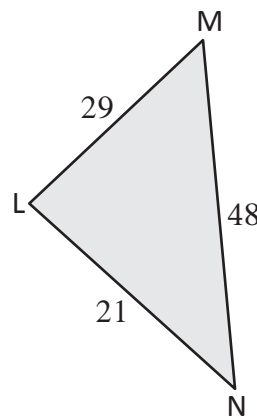
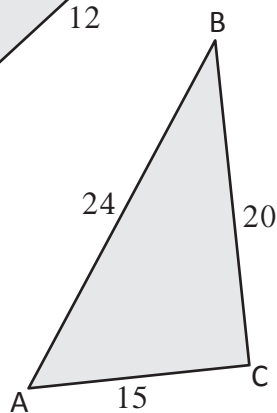
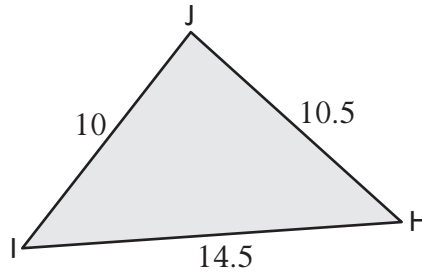
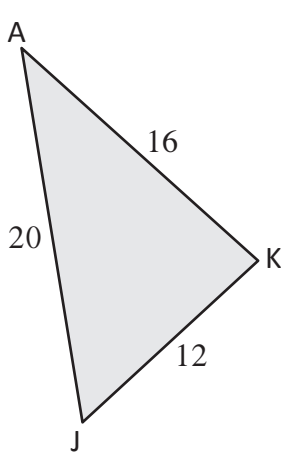
Not right-angled



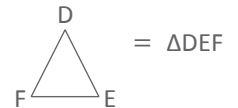


Pythagoras' Theorem for right-angled triangles

- 2 Name all the right-angled triangles pictured below and mark where the right-angle is with the correct symbol.

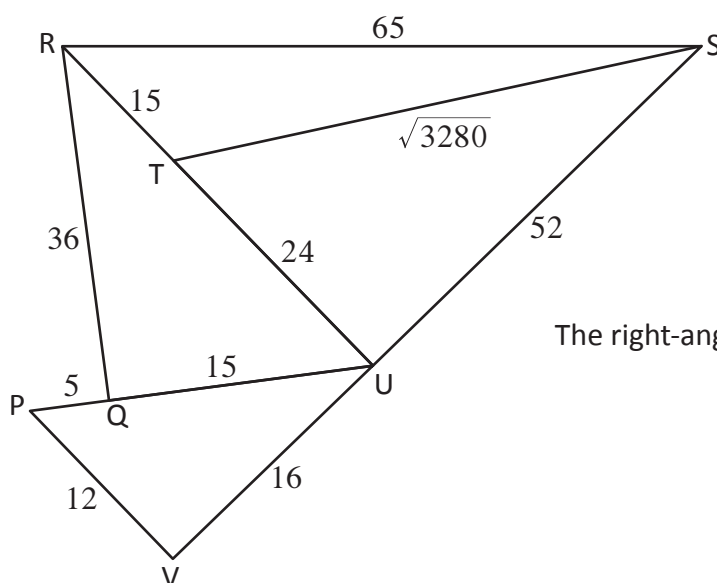


Remember, triangles are named by their vertices.



The right-angled triangles are:

- 3 Earn an awesome passport with this one! Name all the right-angled triangles in this image and mark where the right-angles are with the correct symbol.



The right-angled triangles are:



Diagram not drawn to scale.