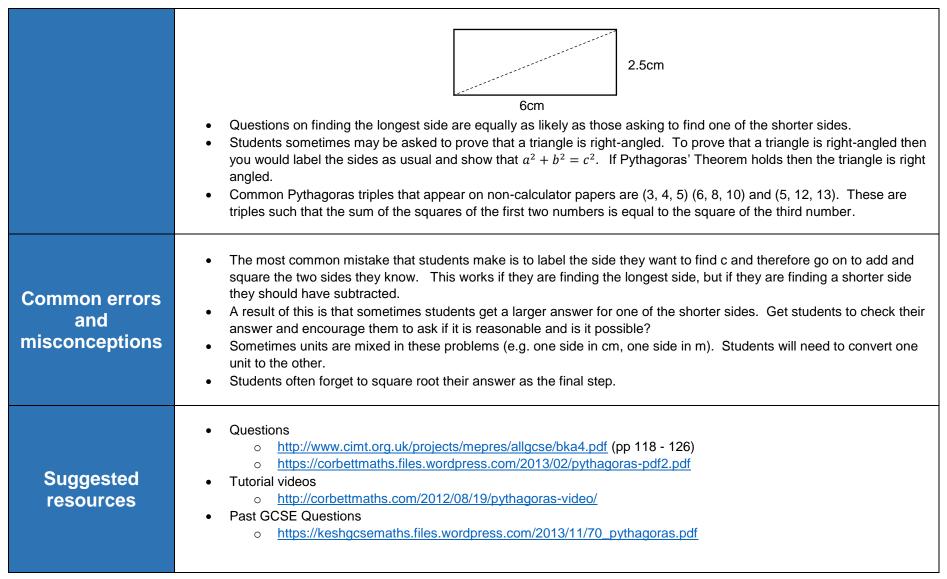
## Guidance for tutors

| Outcome                            | SPT1  | Student can consistently: | Apply Pythagoras' theorem in 2D problems. |
|------------------------------------|---|---------------------------|---|
| How the topic is examined          | <ul> <li>Examined through test paper questions.</li> <li>Questions are equally likely to appear on calculator and non-calculator papers.</li> <li>Questions can ask students to find the longest side or one of the shorter sides.</li> <li>Sometimes a question requiring students to use Pythagoras' Theorem could be hidden within other questions and students have to extract the right-angled triangle.</li> </ul>  |                           |   |
| Prior knowledge                    | <ul> <li>Students should be confident with:         <ul> <li>Area of shapes (SLAV1)</li> <li>Substitution (AEx5)</li> <li>Rearranging formulae (AEx8)</li> <li>Solving equations (AEq1)</li> </ul> </li> <li>In addition questions on this topic can have links to:         <ul> <li>Trigonometry (SPT2)</li> </ul> </li> </ul>   |                           |   |
| Suggested<br>tuition<br>approaches | <ul> <li>Students need to understand that Pythagoras is used to find a missing side in a right-angled triangle if you know the other two sides.</li> <li>Pythagoras' theorem is given as a² + b² = c², where a, b and c are sides of a right-angled triangle and c is the longest side (also known as the hypotenuse). In words this is sometimes referred to as "the square of the longest side is equal to the sum of the two squares of the other two sides".</li> <li>When solving problems involving Pythagoras's theorem here are the steps involved: <ul> <li>Draw out the right-angled triangle (if it is hidden within a diagram)</li> <li>Label the sides of the triangle a, b and c. Remember c is longest side. The longest side is always opposite the right-angle.</li> <li>Write down a² + b² = c²</li> <li>Substitute the numbers in and solve.</li> </ul> </li> <li>Sometimes right-angled triangles are hidden in other shapes and students have to realise they need to use Pythagoras. For example in the rectangle below you would have to use Pythagoras to find the length of the diagonal.</li> </ul> |                           |   |

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## Pythagoras and Trigonometry

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