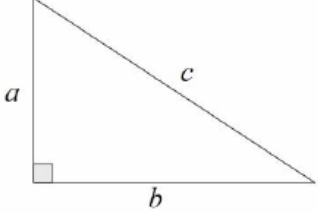
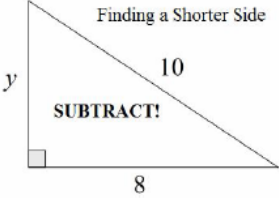


## Topic: Pythagoras' Theorem

Topic/Skill	Definition/Tips	Example
<p>1. Pythagoras' Theorem</p>	<p>For any <b>right angled triangle</b>:</p> $a^2 + b^2 = c^2$  <p>Used to find <b>missing lengths</b>. a and b are the shorter sides, c is the <b>hypotenuse (longest side)</b>.</p>	<p style="text-align: center;">Finding a Shorter Side</p>  <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <math display="block">a = y, b = 8, c = 10</math> <math display="block">a^2 = c^2 - b^2</math> <math display="block">y^2 = 100 - 64</math> <math display="block">y^2 = 36</math> <math display="block">y = 6</math> </div>
<p>2. 3D Pythagoras' Theorem</p>	<p>Find missing lengths by <b>identifying right angled triangles</b>.</p> <p>You will often have to find a missing length you are not asked for before finding the missing length you are asked for.</p>	<p>Can a pencil that is 20cm long fit in a pencil tin with dimensions 12cm, 13cm and 9cm? The pencil tin is in the shape of a cuboid.</p> <p>Hypotenuse of the base = <math>\sqrt{12^2 + 13^2} = 17.7</math></p> <p>Diagonal of cuboid = <math>\sqrt{17.7^2 + 9^2} = 19.8\text{cm}</math></p> <p>No, the pencil cannot fit.</p>

