The Pythagorean relationship can be used to determine the length of the hypotenuse of a right triangle when the lengths of the two legs are known:

$a^2 + b^2 = c^2$ BEDMAS
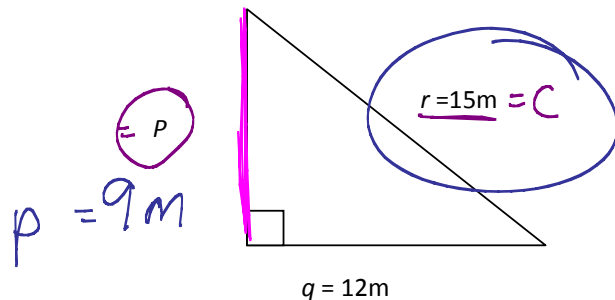
$c = 5cm$

$a = 3cm$

$b = 4cm$
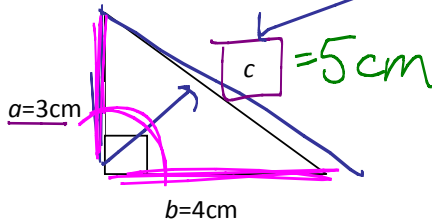
$3^2 + 4^2 = c^2$

$9 + 16 = c^2$

$\sqrt{25} = \sqrt{c^2}$

$5 = c$

The Pythagorean relationship can be used to determine the leg length of a right triangle when the lengths of the hypotenuse and the other leg are known:

$= P$

$r = 15m = c$

$p = 9m$

$q = 12m$

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

$p^2 + 12^2 = 15^2$

$p^2 + 144 = 225$

$ -144 \quad -144$

$\sqrt{p^2} = \sqrt{81}$

$p = 9$

The right triangle below has a square attached to its hypotenuse. What is the perimeter of the triangle? Give you answer to the nearest tenth of a centimetre

distance around

$A = l \times w$

$A = S^2$

$\sqrt{914} = \sqrt{S^2}$

$30.23 = S$

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

$a^2 + 17^2 = 30.23^2$

$a^2 + 289 = 914$

$ -289 \quad -289$

$\sqrt{a^2} = \sqrt{625}$

$a = 25cm$

S

$914cm^2$

$30.23 cm$

S

$17cm$

a
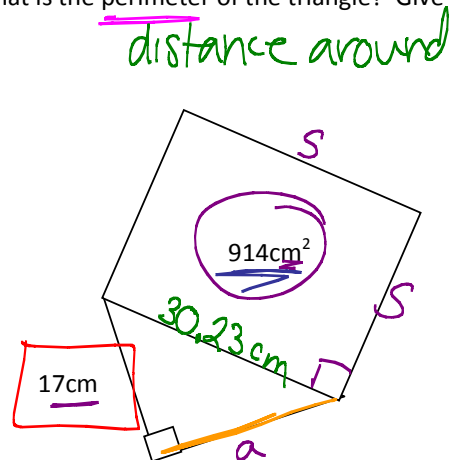
$P = S_1 + S_2 + S_3$

$= 30.23 + 25 + 17$

$= 72.23 \ cm$