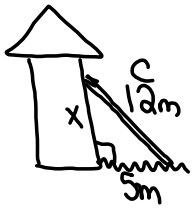
1.7 Applying the Pythagorean Theorem

ex(1): A 12m ladder leans against a building. The distance between the ladder and the building is 5m. How far up the building does the ladder reach?



finding the leg:

$b^2 = c^2 - a^2$

$b^2 = 12^2 - 5^2$

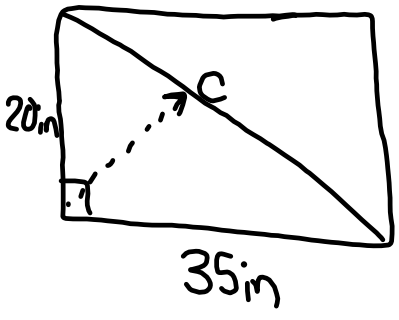
$b^2 = 144 - 25$

$\sqrt{b^2} = \sqrt{119}$

$b = 10.9$

The ladder is 10.9m up the building

ex(2): A tv measures 35in by 20in. What is the length of the diagonal?



finding the hypothenuse

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

$35^2 + 20^2 = c^2$

$1225 + 400 = c^2$

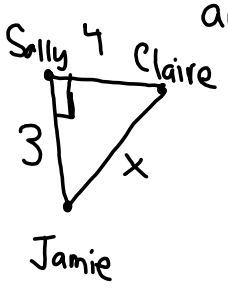
$\sqrt{1625} = \sqrt{c^2}$

$c = 40.3$

ex(3): Sally lives to the North of Jamie and to the west of Claire.

a) Draw the diagram

b) What is the distance between Jamie and Claire?



finding the hypothenuse:

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

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

$9 + 16 = c^2$

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

$\boxed{c = 5}$

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