Section 4.1: Intro to Trig
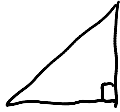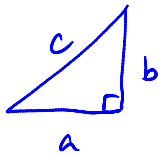
review of triangles:

for all triangles, the sum of the angles is $180°$

in a right triangle, one angle is $90°$, so the sum of the other two angles is $90°$
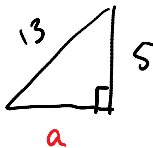
(other two angles are complementary)
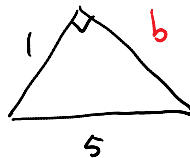

Pythagorean theorem:

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

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calculate the remaining side for the following triangles

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

$a^2 = c^2 - b^2$
$\quad = 13^2 - 5^2$
$\quad = 169 - 25$
$\quad = 144$
$a = 12$

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

$b^2 = c^2 - a^2$
$\quad = 5^2 - 1^2$
$\quad = 24$

$b = \sqrt{24} = 2\sqrt{6}$ ← exact answer

$= 4.899 \leftarrow$ decimal approx rounded to 3 places