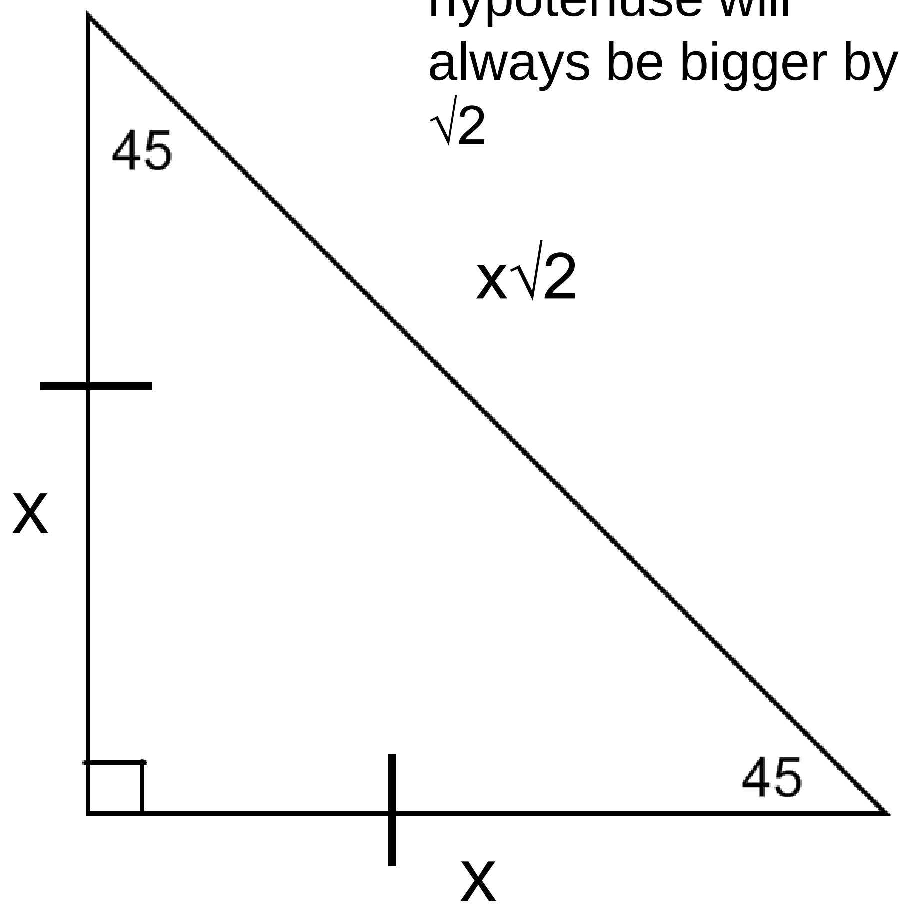
Special RightTriangles

There are 2 special right triangles

The first one we'll talk about is a 45-45-90

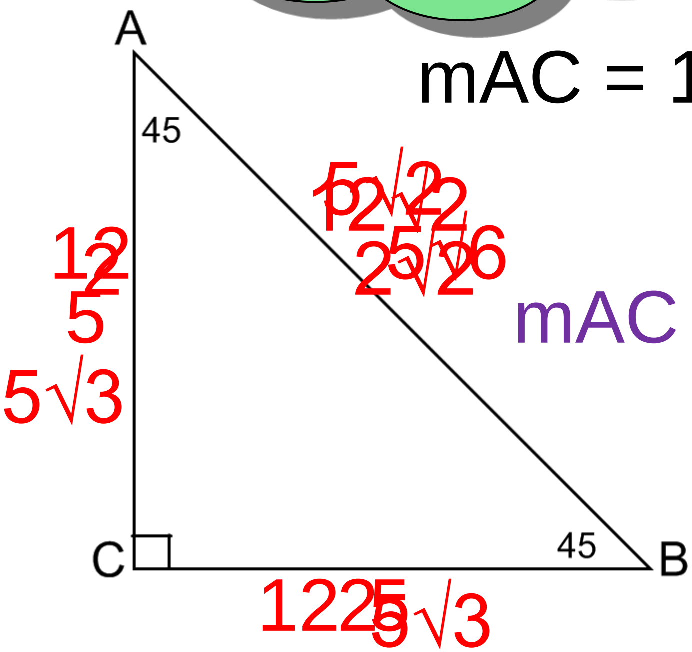
BEHOLD… an isosceles triangle

The length of the hypotenuse will always be bigger by √2



The length of the sides are congruent… let's call them x.

Let's try …



mAC = 12 mCB = 12 mAB = $12\sqrt{2}$

mAC = 2 mCB = 2 mAB = $2\sqrt{2}$

mAC = 5 mCB = 5 mAB = $5\sqrt{2}$

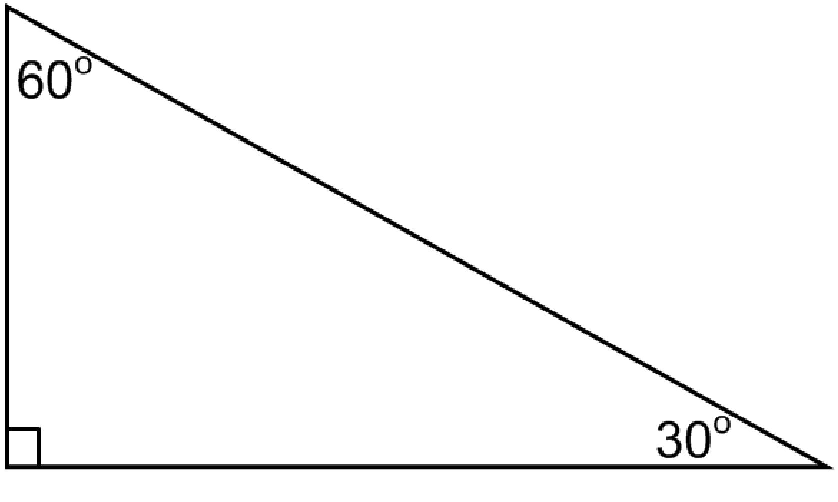
mAC = $5\sqrt{3}$ mCB = $5\sqrt{3}$ mAB = $5\sqrt{6}$

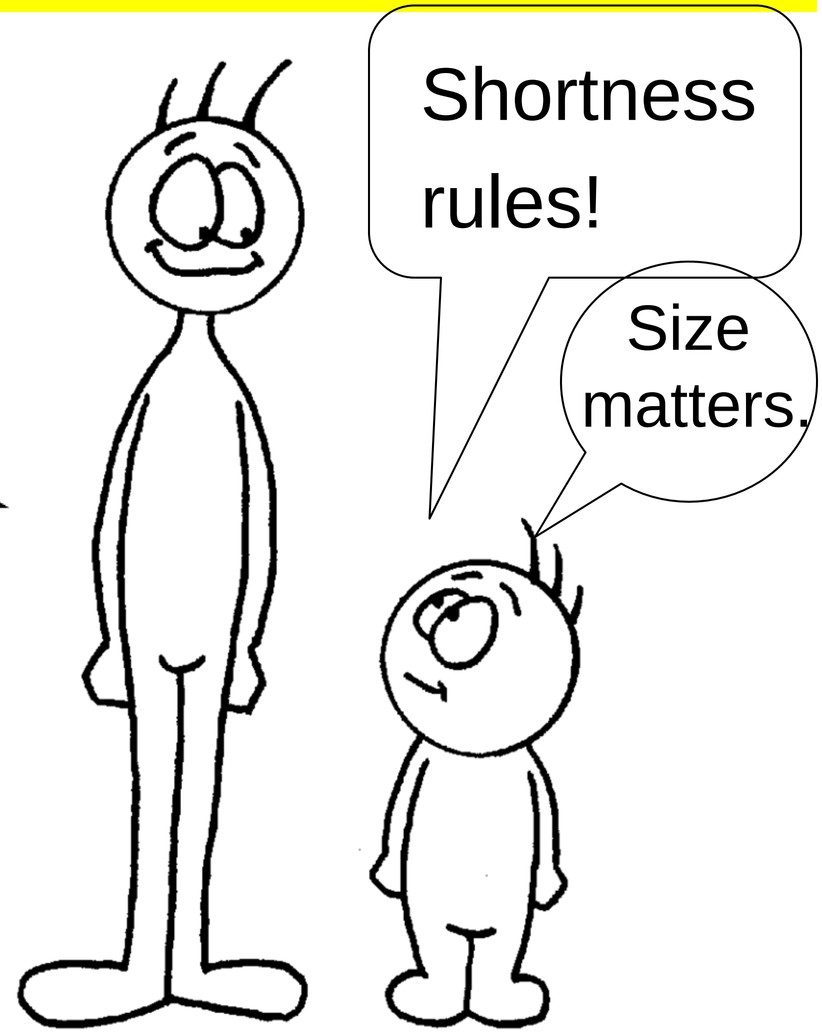
Given the leg, multiply it by √2 to find the hypotenuse.

“The rules” for a 45-45-90

Given the hypotenuse, divide it by √2 to find the leg.

The 2nd special right triangle is a 30-60-90



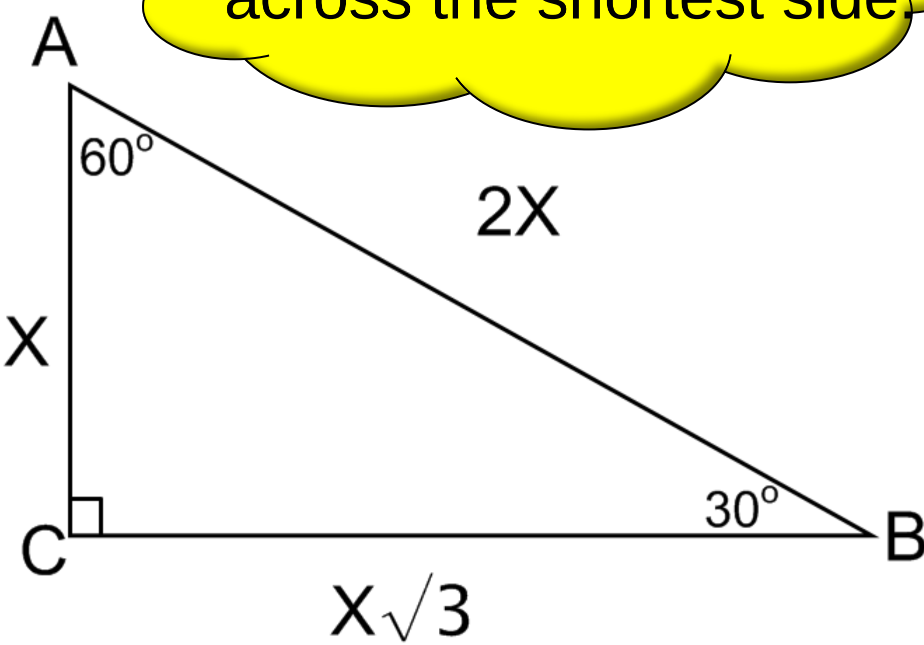


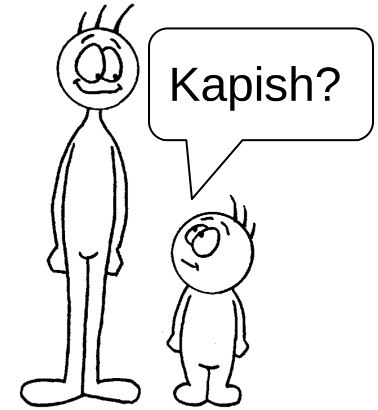
The lengths of the sides of this triangle are based on the SHORT SIDE.

Fun fact:

The smallest angle is across the shortest side.

Given any side, find the length of the short side first!!





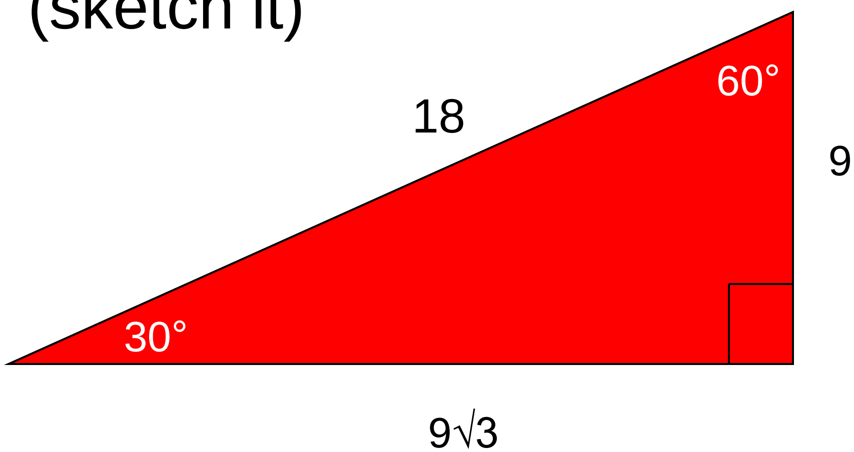
mAC= 7   mCB= $7\sqrt{3}$ mAB= 14

mAC= $\frac{8\sqrt{3}}{3}$ mCB= 8   mAB= $\frac{16\sqrt{3}}{3}$

mAC= 2   mCB= $2\sqrt{3}$ mAB= 4

Find the perimeter and area of a 30-60-90 Δ with a hypotenuse of 18 units.

(sketch it)



What is the length of the short leg?

What is the length of the long leg?

What is the perimeter? (exact)

$27 + 9\sqrt{3}$ units

What is the area? (exact)

$\frac{81\sqrt{3}}{2}$ sq units or $40.5\sqrt{3}$ units^2

Assignment

8-2 Practice

Day 1 Project Piece

Exit Pass