Mathematics

Varying the ratio of side lengths in right angle triangles

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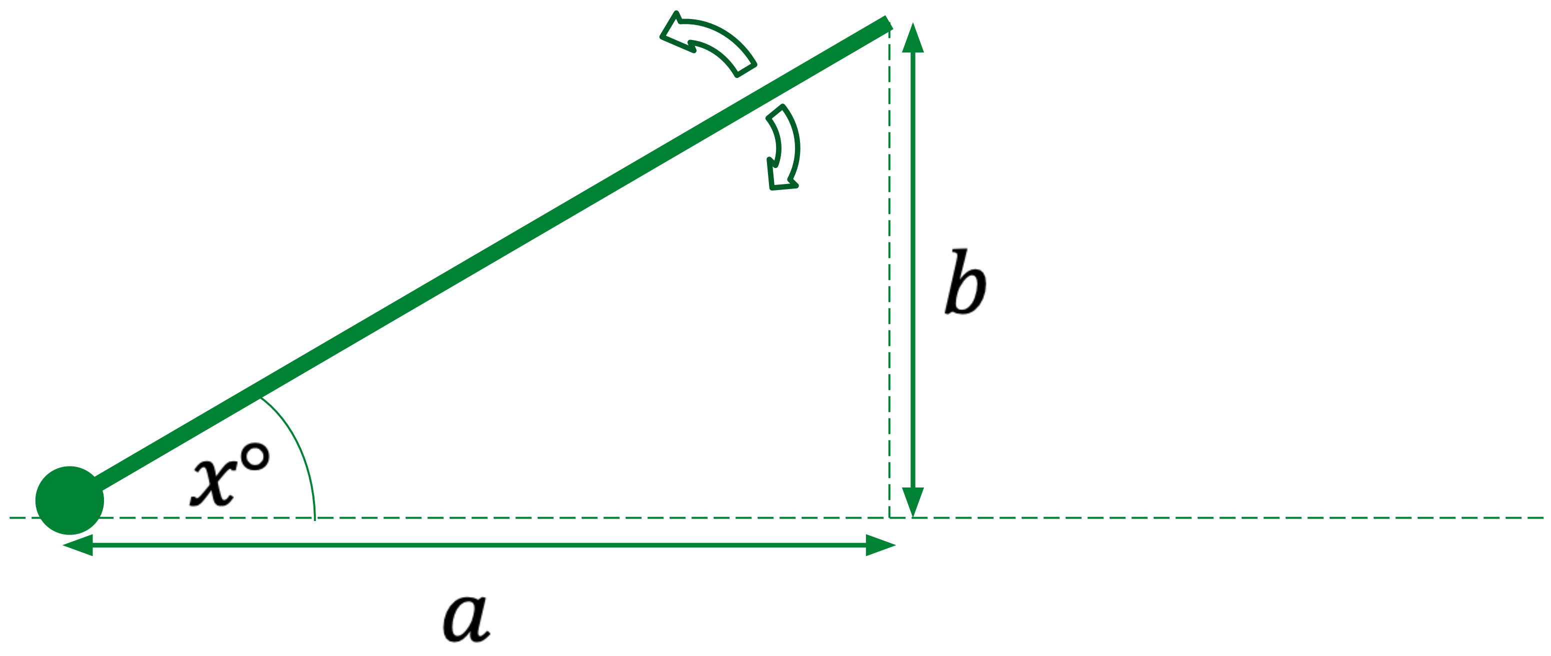
Try this

Imagine a rod rotating about a point on a horizontal line.



How does the relationship between a and b change as you vary the angle x?

What values of x would mean that:

a is longer than b?

b longer than a?

a and b the same length?

Independent task

Draw 4 right angled triangles such that each triangle has a $30°$ angle.

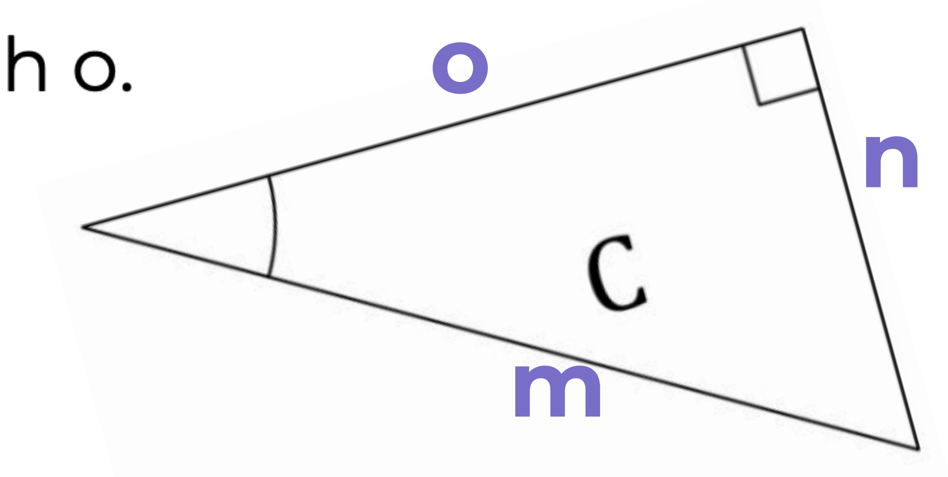
Name the triangles A, B, C, D.

For each triangle label the hypotenuse with m.

Label the side opposite to the $30°$ angle with n.

Label the last side with o.

For example:



Measure the sides and complete the table.

Enlarge one of your triangles by scale factor of 2 and $\frac{1}{3}$. What do you notice?

Triangle	A	B	C	D
Marked angle				
n				
m				
o				

Explore

Construct a right-angled triangle similar to the one shown below

such that $x = 30°$.

Construct another 2 triangles where $x = 45°, and\ 60°$.

What do you notice about a, b and 4?