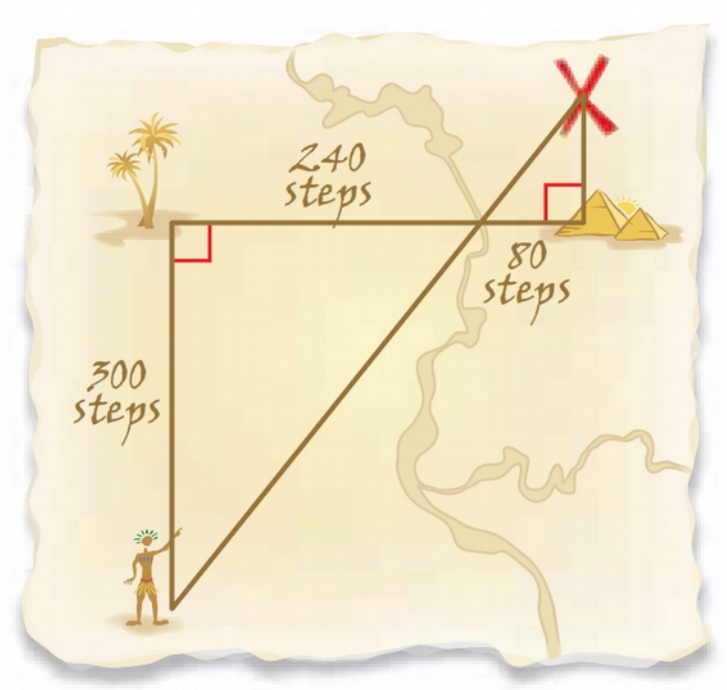
Similar Triangles

https://youtu.be/iJ2MzdM2u4k



1	Welcome to this lesson on similar triangles.
2	In basic terms, similar triangles are triangle that have the same shape but have different sizes.
3	The triangle could be rotated or reflected.
4	In similar triangles, all corresponding angles are equal.
5	The ratio of corresponding sides are also equal.
6	6 corresponds to 4.
7	12 corresponds to 8.
8	And 15 corresponds to 10.
9	Notice that all of the side lengths of the larger triangle are on the top of the fractions and all the value for the smaller triangle are on the bottom of the fractions.
10	When you divide these figures, they all equal 1.5.
11	This is called the scale factor.
12	The larger triangle is on eand a half time as big as the smaller triangle.
13	Let's look at a few examples.
14	Determine if the following triangles are similar.
15	To of the corresponding angles are equal.
16	If the third angle then the triangles are similar.
17	We know that all angles in a triangle sum to 180,
18	so to find the missing angle we take 180 minus 62 minus 40, which is 78.

19	Tha angle corresponds, so the triangles are similar.
20	Please note, knowing all the angles corresponds without knowing anything about the side length ratios,
21	only proves that triangles re similar.
22	This does not work for any other shape.
23	For example, consider a square and a rectangle.
24	Both have the same angles, but they are not similar.
25	You must show that all angles correspond and all side ratios correspond for any other shape other than a triangle.
26	Example 2 : We are now given any of the angles so we'll have to compare the side lengths.
27	A'B' over AB is 22.6 divided by 67.8, which equals 0.3 repeated.
28	B'C' over BC is 33.0 divided by 99.0, which is also 0.3 repeated.
29	C'A' over CA is 30.0 divided by 7.4, which equals 0.343.
30	Because this ratio is not the same, the triangles are note similar.
31	Similar triangles are often find in real life.
32	Determine the distance across the lake.
33	We know that these are similar triangles because of the parallel lines.
34	Alternate interior angles are equal and opposite angles are equal.
35	All 3 angles correspond so the triangles are similar.
36	To determine what scale factor was used in the triangles, we need to find a set of corresponding sides.
37	In this style of diagram, the sides forming a continuous line are corresponding,
38	this mean that the scale factor can be found by taking 78 divided by 26, which is 3.
39	The 2 parallel lines are corresponding, so to find the distanc eacross the lake, we would multiply 24 by the sclae factor to get 72 feet.
40	Thank for watching this lesson on similar triangles