A frequent application of proportions is to relate a scale model, blueprint, or scaled diorama to the actual big or huge object.   If we know how the miniature and actual object relate to one another,
  ➢ we can calculate dimensions of the actual object
  ➢ we can even use proportions to find a missing length of an object.

Vocabulary:
Similar – figures that are the *exact same* shape, not necessarily the same size. **Similar** objects are said to be **proportionate.**   **~** is the symbol used for similarity.
**Corresponding sides -** sides in two figures that are in the same relative position to the rest of the shape.
Corresponding angles – angles of two figures that are in the same relative position to the rest of the shape.

Two figures are said to be similar if and only if the lengths of the corresponding sides are proportional and all pairs of corresponding angles have equal measures.

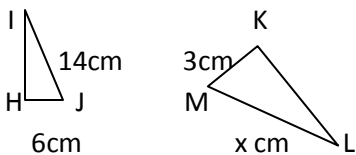$$\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$$
△ABC ~ △ DEF
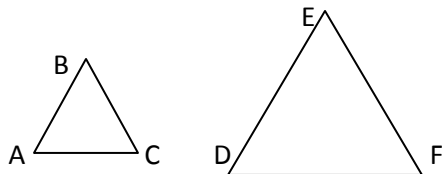
$m\angle\, A = m \angle D,\ m \angle B = m \angle E,$
$m \angle C = m \angle F$
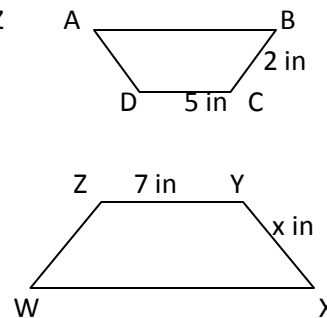
Find the missing measurements in the similar figures:
△ HIJ ~ △ KLM

14cm   3cm
H J
6cm   x cm   L

ABCD ~ WXYZ

2 in
D   5 in C

Z   7 in   Y
x in
W   X

In Missouri the trees are much taller than here in Texas. The shadow of this red oak is 45 feet long. Mr. Williams is 6 feet tall and his shadow is 3 feet long. Write and solve a proportion to find the height of the red oak tree.   *Draw and label a picture!*