Solve the following proportion:

$$\frac{4}{9} = \frac{x}{50}$$

$\frac{9x}{9} = \frac{200}{9}$ $\quad x = 22.23$

Name two different ways to tell if the following ratios are proportional:

$$\frac{2}{6} = \frac{5}{15}$$

30 30

$\frac{10}{30} = \frac{10}{30}$

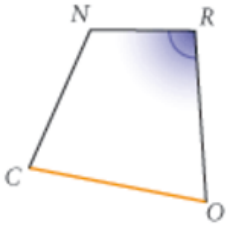
$\frac{1}{3} = \frac{1}{3}$

$0.\overline{3} = 0.\overline{3}$

Investigation 7.1 - on computer

Dilation Similarity Conjecture: If one polygon is a dilated image of another polygon, then the polygons are similar

- Two polygons are similar if and only if the corresponding angles are congruent and the corresponding sides are proportional



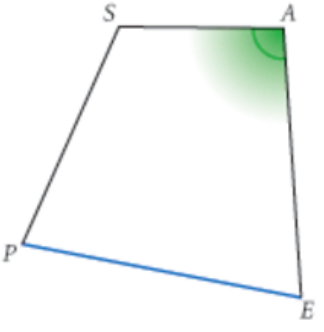
Corresponding angles are congruent:

$\angle C \cong \angle P$ $\angle R \cong \angle A$

$\angle O \cong \angle E$ $\angle N \cong \angle S$

Corresponding segments are proportional:

$$\frac{CO}{PE} = \frac{OR}{EA} = \frac{RN}{AS} = \frac{NC}{SP}$$



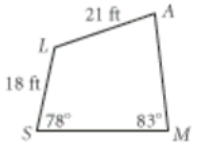
Corn PEAS

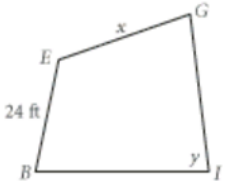
similar

EXAMPLE

$SMAL \sim BIGE$

Find x and y.





$$\frac{18}{24} = \frac{21}{x}$$

$x = 28 ft$

$y = 83°$

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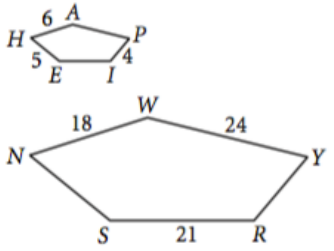
1. $HAPIE \sim NWYRS$

$AP =$ 8

$EI =$ 7

$SN =$ 15

$YR =$ 12



2. $QUAD \sim SIML$

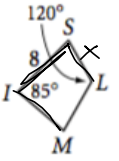
$SL =$ _____

$MI =$ _____

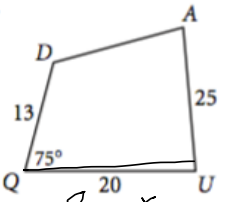
$m\angle D =$ _____

$m\angle U =$ _____

$m\angle A =$ _____



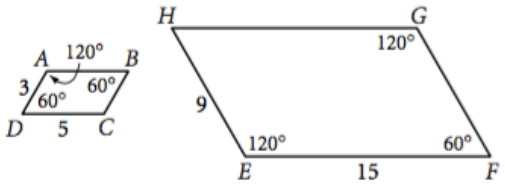
$\frac{8}{20} = \frac{x}{13}$



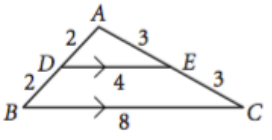
$\frac{8}{20} = \frac{x}{25}$

In Exercises 3–6, decide whether or not the figures are similar. Explain why or why not.

3. $ABCD$ and $EFGH$



4. $\triangle ABC$ and $\triangle ADE$



January 23, 2019