Target 7.2: Identify similar polygons and apply properties of similar polygons to solve problems.

Target 9.6: Identify and draw translations.

1. Given ΔBIG ~ ΔFAN, find all the missing sides and angles.
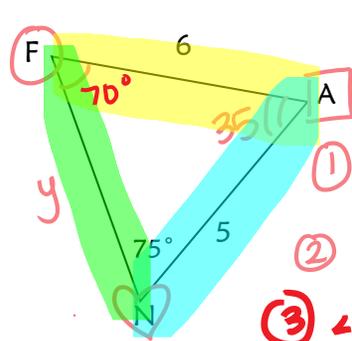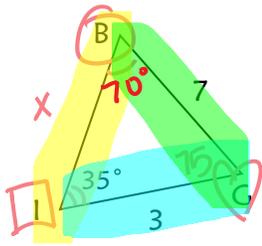
Ratio = $\frac{3}{5}$

① $\frac{3}{5} = \frac{x}{6}$ ⟹ $18 = 5x$

② $\frac{3}{5} = \frac{7}{y}$ ⟹ $3y = 35$

③ ∠B = $180 - (75 + 35)$
$180 - 110 = 70°$

BI = $\frac{18}{5}$

NF = $\frac{35}{3}$

m∠B = $70°$

m∠G = $75°$

m∠F = $70°$

m∠A = $35°$

Directions: Use the diagram to the right to answer questions 2-3.

2) Complete the similarity statement: Δ_SRQ_ ~ Δ_JKL_

3) Find the similarity ratio with all three pairs of corresponding sides.
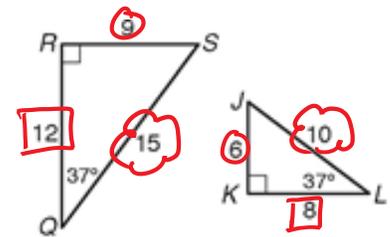
$\frac{6}{9} = \frac{8}{12} = \frac{10}{15}$

$\frac{2}{3} = \frac{2}{3} = \frac{2}{3}$

Ratio = $\frac{2}{3}$ or $\frac{3}{2}$

ALWAYS, SOMETIMES, or NEVER?

a) Two scalene triangles are similar. Sometimes

Depends on side lengths ☺

b) Two equilateral triangles are similar.

Always

since ∠s and sides ≅

Applications:

4) Miss Palumbo wants to hang a poster in her classroom of her and her seventy cats. Her original photograph is 4 in. by 6 in. The poster will be 18 ft. by 27 ft. What is the scale factor of enlargement?

$\frac{18}{4}$ ⟹ 4.5 scale factor

5) Miss Palumbo would like to buy a tiger to display at her wedding reception. She needs to find the perfect size cage for this tiger. The model she has created of the cage is 12 in. by 16 in. The actual cage will be ~~12~~ 24 ft. long. How tall will the actual cage need to be?

$\frac{12}{16} =$

9.6 Dilations/Scale Factor in the coordinate Plane

3) Dilate ΔABC with a scale factor of 2 with (0, 0) as the center. *Multiply by 2* *easy! just use ordered pairs*

A'(-2, 6) B'(4, 4) C'(-4, -2)

A(-1, 3)   B(2, 2)   C(-2, -1)
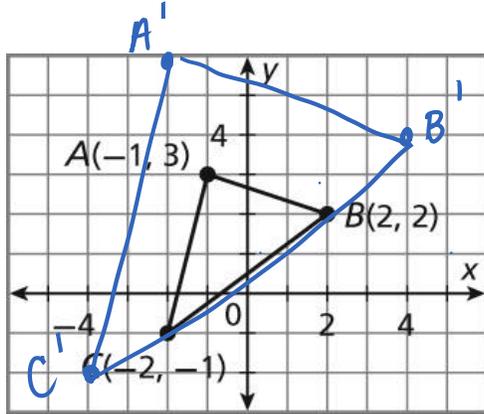
4) Dilate ΔABC with a scale factor of ½ with (0, 0) as the center *Divide by 2*

A'(-½, 3/2) B'(1, 1) C'(-1, -½)

A(-1, 3)   B(2, 2)   C(-2, -1)
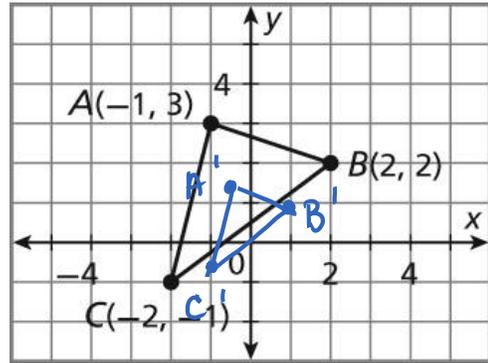
5) Given that $\triangle BAC \sim \triangle DAE$, find the coordinates of D and the scale factor.

E(0, 12)
C(0, 9)
9   12
18
D   B (-18, 0)   A(0, 0)
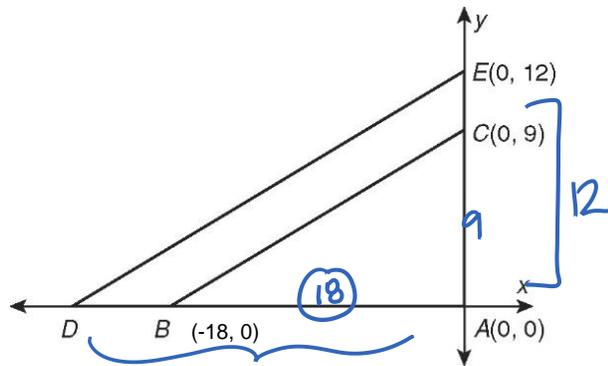
$$SF = \frac{9}{12} = \left(\frac{3}{4}\right)$$

$$\frac{3}{4} = \frac{18}{x}$$

$$3x = 72$$

$$x = 24$$

Scale factor: _____

D (-24, 0)

6) Given that $\triangle LKM \sim \triangle NKP$, find the coordinates of P and the scale factor.

K(0, 0)   M(3, 0)   P   X
3
9
12
L(0, -9)
N(0, -12)

$$\frac{3}{4} = \frac{3}{x}$$

$$x = 4$$

$$\frac{9}{12} = \frac{3}{4}$$

Scale factor: _____

P (4, 0)