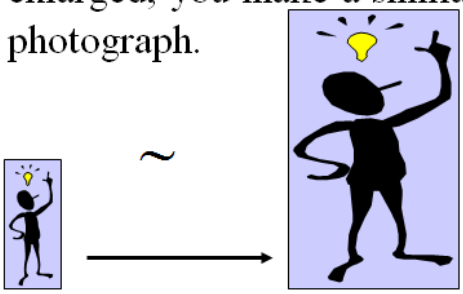
Similar Figures

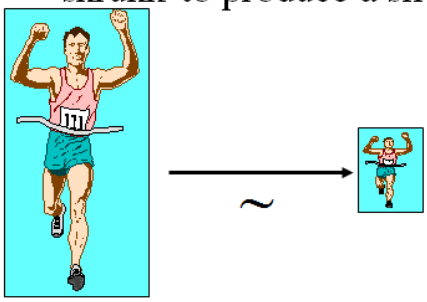
Enlargements

- When you have a photograph enlarged, you make a similar photograph.



Reductions

- A photograph can also be shrunk to produce a slide.



Similar Figures

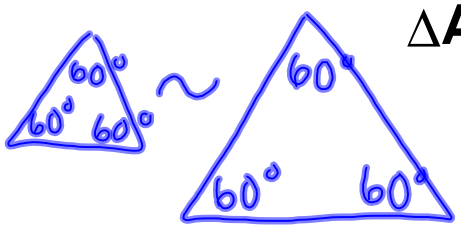
✓1. Corresponding Angles are congruent

2. Corresponding sides are proportional

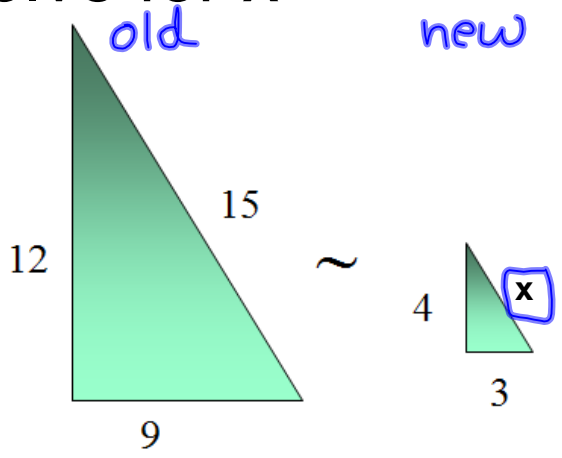
***Figures look the same but are different sizes

Similarity Statement

$\Delta ABC \sim \Delta DEF$



Solve for x



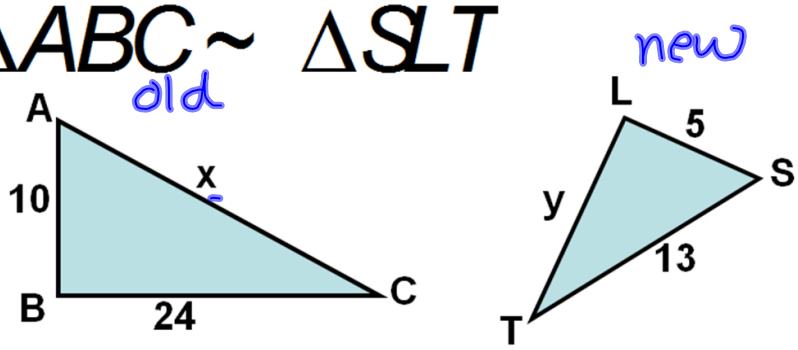
$\frac{x}{15} \times \frac{3}{9}$

$\frac{9x}{9} = \frac{45}{9}$

$x = 5$

Solve for x and y

$\Delta ABC \sim \Delta SLT$



$\frac{13}{x} = \frac{5}{10}$

$\frac{5x}{5} = \frac{130}{5}$

$x = 26$

$\frac{y}{24} \times \frac{5}{10}$

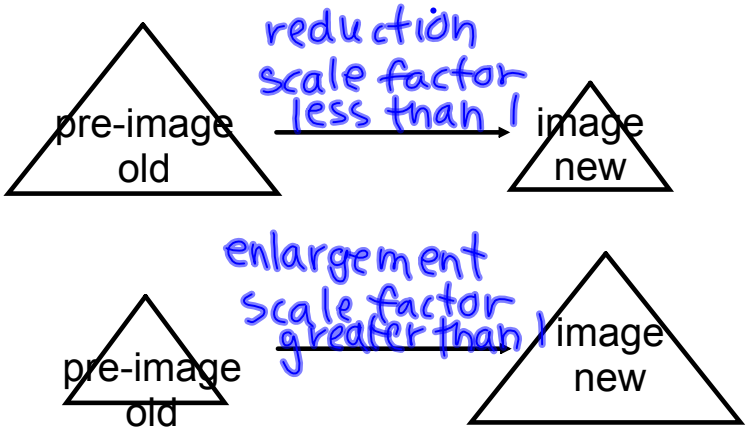
$\frac{10y}{10} = \frac{120}{10}$

$y = 12$

Dilation

(another word for comparing similar figures)

A transformation that changes
the size of a figure but not its shape.



Scale Factor – the ratio of a new image to its original image

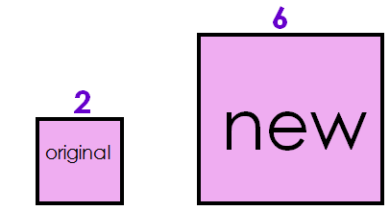
$$scale factor = \frac{new}{original}$$

- The ratio of corresponding sides

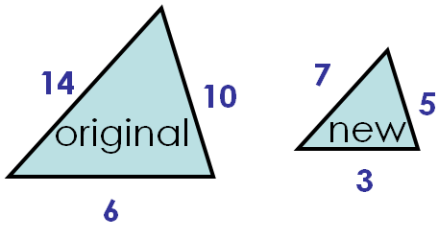
Scale Factor

- When scale factor is **greater than 1**, the shape gets *bigger* (enlargement).
- When scale factor is **less than 1, but greater than 0**, the shape gets *smaller* (reduction).

SCALE FACTOR.

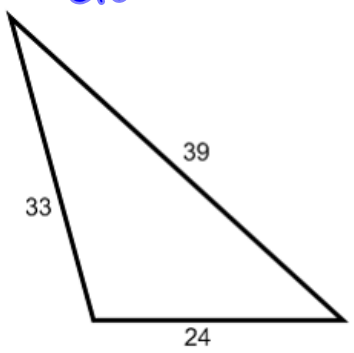


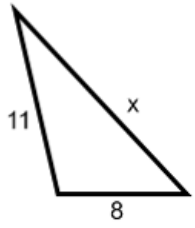
$$\frac{6}{2} = \frac{3}{1}$$



$$\frac{5}{10} = \frac{1}{2}$$

Find the scale factor and solve for x





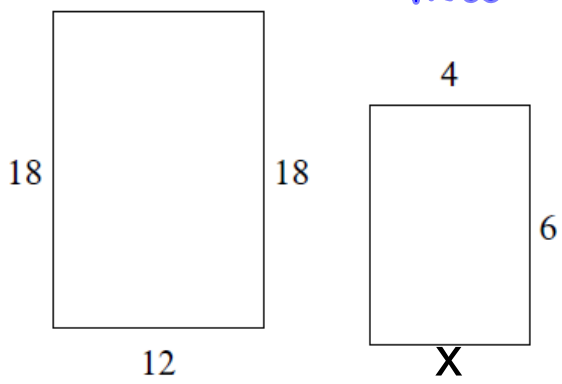
old new scale factor = $\frac{\text{new}}{\text{old}} = \frac{11}{33} = \frac{1}{3}$

$\frac{x}{39} \times \frac{11}{33}$

$\frac{33x}{33} = \frac{429}{33}$

$x = 13$

Find the scale factor and solve for x



scale factor = new/old = 6/18 = 1/3

x/12 = 6/18

18x/18 = 72/18

x = 4

Jan 20-3:13 PM

Find the coordinates of the dilation image for the given scale factor, *k*.

Example 1:

$G(0, -2)$, $H(1, 3)$, and $I(4, 1)$; $k = 2$

All you do is multiply *k* to (x, y).

G'(0,-4) H'(2,6) I'(8,2)

Find the coordinates of the dilation image for the given scale factor, *k*.

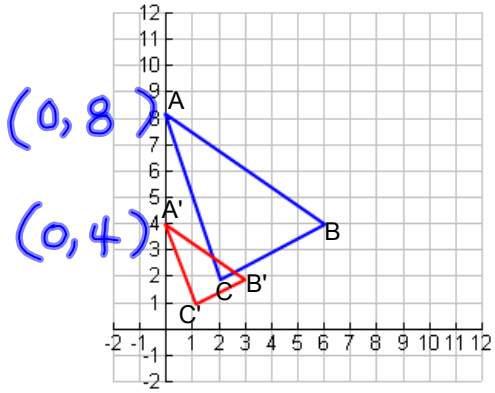
Example 2

$L(8, -8)$, $N(0, 16)$, and $M(4, 5)$; $k = 1/4$

All you do is multiply *k* to (x, y).

L'(2,-2) N'(0,4) M'(1, 1.25)

What is the scale factor from ABC to A'B'C'?



scale factor = $\frac{\text{new}}{\text{old}} = \frac{4}{8} = \frac{1}{2}$