6.3 Use Similar Polygons

- Dr. Evil & Mini-Me

Similar Polygons - Corresponding sides increase or decrease by same ratio

Congruent

Dr. Evil & Dr. Evil

→ Same angles

→ Same sides

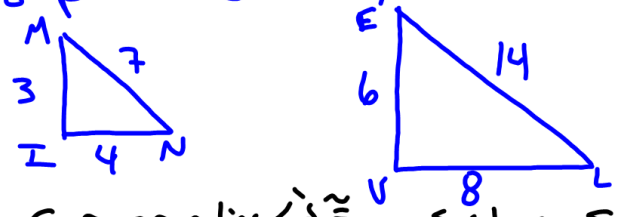
Similar

Mini-Me & Dr. Evil

→ Same angles

→ All sides must have same ratio

To prove Similarity



Corresponding ∠'s ≅

$\angle M \cong \angle E$

$\angle I \cong \angle V$

$\angle N \cong \angle L$

Sides Same Ratio

$$\frac{\text{Small}}{\text{big}} = \frac{MI}{EV} = \frac{IN}{VL} = \frac{MN}{EL}$$

$$\frac{3}{6} = \frac{4}{8} = \frac{7}{14}$$

all reduce to $\frac{1}{2}$

*The reduced ratio is called the scale factor

Perimeters - Have same ratio as scale factor

Small: $3+4+7=14$ Large: $6+8+14=28$ $\frac{14}{28}$

Ratio = $\frac{14}{28} = \frac{1}{2}$