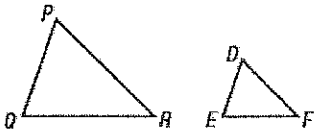


1. If polygons are similar then what do you know about the corresponding sides and the corresponding angles?

CORRESPONDING SIDES ARE PROPORTIONAL
CORRESPONDING \angle 's ARE \cong

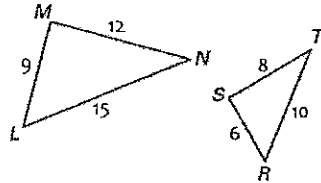
Given the similar figures, name all pairs of corresponding sides and angles. Look at the similarity statement to help.

2. $\triangle PQR \sim \triangle DEF$



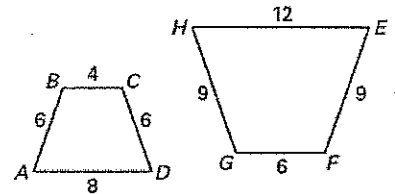
$\overline{QP} \rightarrow \overline{ED}$ $\angle Q \cong \angle E$
 $\overline{PR} \rightarrow \overline{DF}$ $\angle P \cong \angle D$
 $\overline{RQ} \rightarrow \overline{FE}$ $\angle R \cong \angle F$

3. $\triangle LMN \sim \triangle RST$



$\overline{LM} \rightarrow \overline{RS}$ $\angle L \cong \angle R$
 $\overline{MN} \rightarrow \overline{ST}$ $\angle M \cong \angle S$
 $\overline{NL} \rightarrow \overline{TR}$ $\angle N \cong \angle T$

4. $ABCD \sim HGFE$



$\overline{AB} \rightarrow \overline{HG}$ $\angle A \cong \angle H$
 $\overline{BC} \rightarrow \overline{GF}$ $\angle B \cong \angle G$
 $\overline{CD} \rightarrow \overline{FE}$ $\angle C \cong \angle F$
 $\overline{DA} \rightarrow \overline{EH}$ $\angle D \cong \angle E$

Use the similar polygons above to write the statement of proportionality for each:

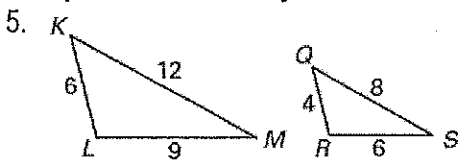
$\frac{QP}{ED} = \frac{PR}{DF} = \frac{RQ}{FE}$

$\frac{LM}{RS} = \frac{MN}{ST} = \frac{NL}{TR}$

$\frac{AB}{HG} = \frac{BC}{GF} = \frac{CD}{FE} = \frac{DA}{EH}$

LARGE TO SMALL, $SF < 1$, SMALL TO LARGE, $SF > 1$

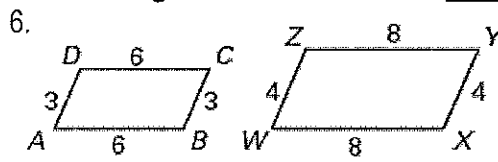
Complete the similarity statement for the similar figures and then find the scale factor. REDUCE fractions!



$\frac{6}{4} = \frac{3}{2}$ or 1.5

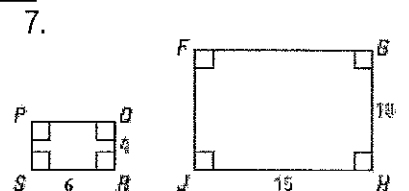
$\triangle LKM \sim \triangle RQS$

Scale Factor: SMALL \rightarrow BIG 1.5
BIG \rightarrow SMALL 0.6



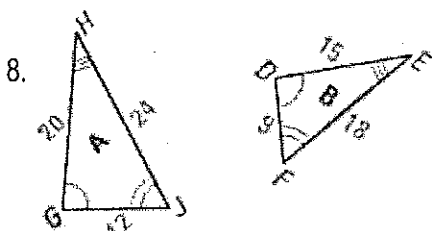
$CBAD \sim ZWXY$

Scale Factor: $\frac{4}{3}$ (SMALL TO BIG) or 1.3



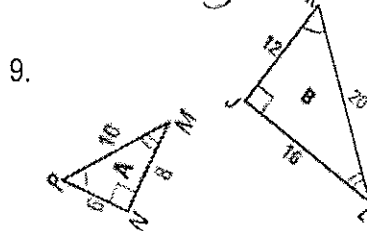
$RSPQ \sim HJFG$

Scale Factor: $\frac{15}{6} = \frac{5}{2} = 2.5$ \rightarrow B \rightarrow S
or .4 B \rightarrow S



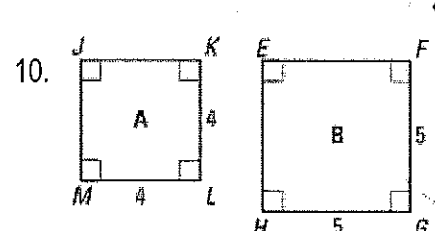
$\triangle HJG \sim \triangle EFD$

Scale Factor: $\frac{9}{12} = \frac{3}{4} = .75$ \rightarrow BIG \rightarrow SMALL
or 1.3 SMALL \rightarrow BIG



$\triangle NPM \sim \triangle JKL$

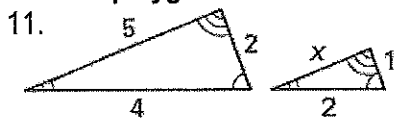
Scale Factor: $\frac{12}{6} = 2$ or $\frac{1}{2}$



$KJML \sim FEHG$

Scale Factor: $\frac{5}{4} = 1.25$ or .8

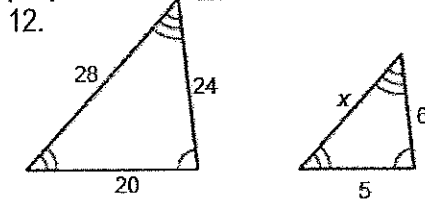
The two polygons are similar. Write a proportion and solve for x.



$$\frac{5}{x} = \frac{4}{2}$$

$$10 = 4x$$

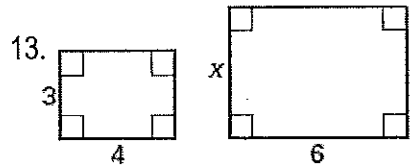
$$x = 2.5$$



$$\frac{28}{x} = \frac{24}{6}$$

$$24x = 168$$

$$x = 7$$

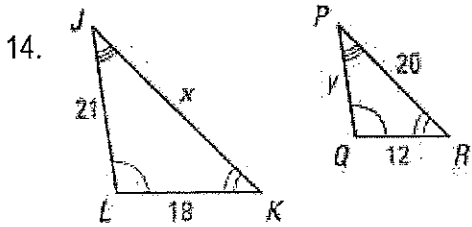


$$\frac{3}{x} = \frac{4}{6}$$

$$18 = 4x$$

$$x = 4.5$$

Complete the similarity statement for the similar figures and then find the scale factor. Next, write proportions and SOLVE for the missing lengths.



$$\triangle JKL \sim \triangle PQR$$

$$SF = \frac{12}{18} = \frac{2}{3} \text{ or } .67 \text{ (BIG TO SMALL)}$$

$$SF = \frac{18}{12} = \frac{3}{2} \text{ or } 1.5 \text{ (SMALL TO BIG)}$$

USING SF. USING PROPORTIONS

$$y = 21 \cdot .67 = 14$$

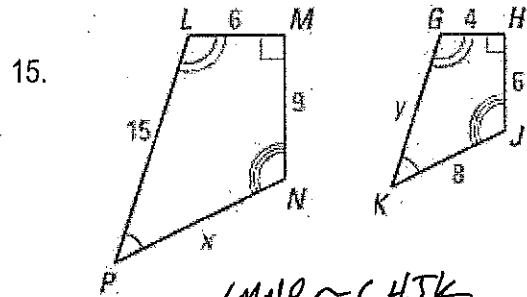
$$x = 20 \cdot 1.5 = 30$$

$$\frac{x}{20} = \frac{18}{12} \Rightarrow 12x = 360$$

$$x = 30$$

$$\frac{y}{21} = \frac{12}{18} \Rightarrow 18y = 252$$

$$y = 14$$



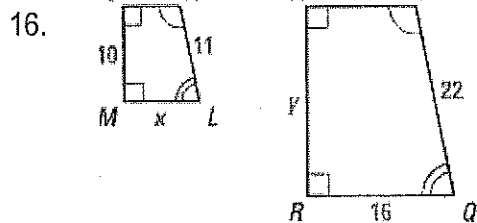
$$LMNP \sim GHJK$$

$$SF = \frac{6}{4} = \frac{3}{2} = 1.5 \text{ (SMALL TO BIG)}$$

$$SF = \frac{4}{6} = \frac{2}{3} \cdot .67 \text{ (BIG TO SMALL)}$$

$$\frac{9}{6} = \frac{x}{8} \Rightarrow 72 = 6x \Rightarrow x = 12$$

$$\frac{15}{4} = \frac{y}{6} \Rightarrow 60 = 4y \Rightarrow y = 15$$



$$JKLM \sim NPQR$$

$$SF = \frac{6}{12} = \frac{1}{2} = .5 \text{ (BIG TO SMALL)}$$

$$SF = \frac{12}{6} = 2 \text{ (SMALL TO BIG)}$$

$$\frac{6}{12} = \frac{x}{16}$$

$$\frac{6}{12} = \frac{10}{y}$$

$$x = 16 \cdot .5 = 8$$

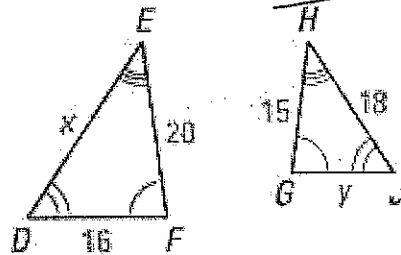
$$y = 10 \cdot 2 = 20$$

$$96 = 12x$$

$$x = 8$$

$$6y = 120$$

$$y = 20$$



$$\triangle EFD \sim \triangle HGS$$

$$SF = \frac{20}{15} = \frac{4}{3} = 1.33 \text{ (SMALL TO BIG)}$$

$$SF = \frac{15}{20} = \frac{3}{4} = .75 \text{ (BIG TO SMALL)}$$

$$\frac{x}{16} = \frac{20}{15} \Rightarrow 15x = 360 \text{ or } x = 18 \cdot 1.33 = 24$$

$$y = 16 \cdot .75 = 12$$

$$\frac{16}{4} = \frac{20}{15} \Rightarrow 240 = 20y$$

$$y = 12$$