

# INTRODUCTION TO SIMILAR POLYGONS NOTES

**Criteria for Similarity:**

- Corresponding angles congruent
- Corresponding sides proportional

**Scale Factor:**

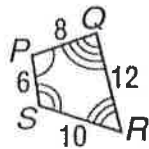
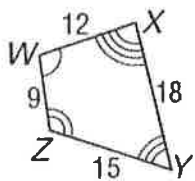
the ratio between a pair of corresponding sides

**Similarity Statement:**

use the symbol  $\sim$  in between the two polygons

Determine whether the pair of polygons is similar. If similar, identify the scale factor of the smaller to the larger polygon and write a similarity statement.

1.



$$\frac{8}{12} = \frac{2}{3}$$

$$\frac{12}{18} = \frac{2}{3}$$

$$\frac{10}{15} = \frac{2}{3}$$

$$\frac{6}{9} = \frac{2}{3}$$

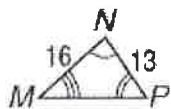
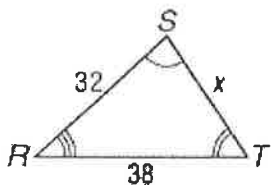
yes

$$\text{s.f.} = \frac{2}{3}$$

$PQRS \sim WXYZ$

Each pair of polygons is similar. Find  $x$  and the length of each indicated side. Find the scale factor of the smaller to the larger polygon. Write a similarity statement.

2.  $\overline{ST}$



$$\frac{16}{32} = \frac{1}{2}$$

$$\frac{1}{2} = \frac{13}{x}$$

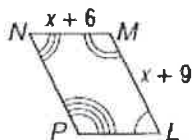
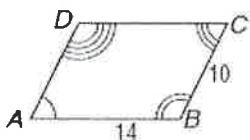
$$x = 26$$

$$ST = 26$$

$$\text{s.f.} = \frac{1}{2}$$

$\triangle RST \sim \triangle MNP$

3.  $\overline{MN}, \overline{LM}$



$$\frac{x+9}{14} = \frac{x+6}{10}$$

$$10x+90 = 14x+84$$

$$6 = 4x$$

$$x = \frac{3}{2} = 1.5$$

$$MN = 7.5$$

$$ML = 10.5$$

s.f. =  $\frac{3}{4}$   $ABCD \sim LMNP$