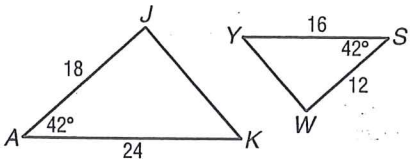
NAME Key DATE _____ PERIOD ____

6-3 Practice

Similar Triangles

Determine whether each pair of triangles is similar. Justify your answer.

1.

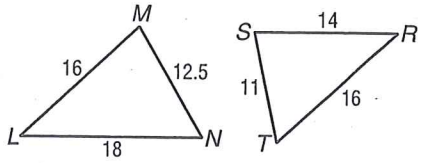


yes $\triangle JAK \sim \triangle WSY$

SAS Similarity

SAS~

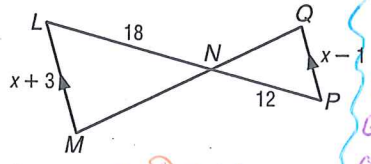
2.



No the sides are Not proportional

ALGEBRA Identify the similar triangles, and find x and the measures of the indicated sides.

3. $\overline{LM}$ and $\overline{QP}$



$\triangle LMN \sim \triangle PQN$

$\frac{18}{12} = \frac{x+3}{x-1}$ $18x - 18 = 12x + 36$

$6x = 54$

$x = 9$

$x = 9$

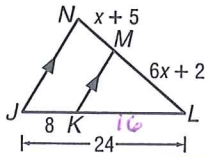
$LM = 9 + 3$

$LM = 12$

$QP = 9 - 1$

$QP = 8$

4. $\overline{NL}$ and $\overline{ML}$



$\frac{16}{24} = \frac{6x+2}{7x+7}$

$144x + 48 = 112x + 112$

$32x = 64$

$\frac{32}{32}$ $\frac{64}{32}$

$x = 2$

$MKL \sim NSL$

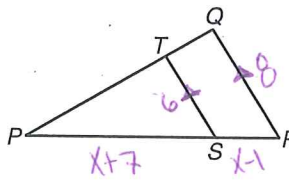
$ML = 6x + 2$

$ML = 14$

$NL = 21$

Use the given information to find each measure.

5. If $\overline{TS} \parallel \overline{QR}$, $TS = 6$, $PS = x + 7$, $QR = 8$, and $SR = x - 1$, find PS and PR.



$\frac{6}{8} = \frac{x+7}{2x+6}$ $12x + 36 = 8x + 56$

$4x = 20$

$x = 5$

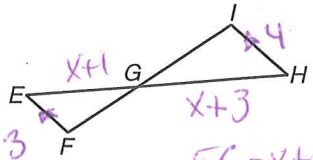
$PS = x + 7$

$PS = 12$

$PR = 2x + 6$

$PR = 16$

6. If $\overline{EF} \parallel \overline{HI}$, $EF = 3$, $EG = x + 1$, $HI = 4$, and $HG = x + 3$, find EG and HG.



$\frac{3}{4} = \frac{x+1}{x+3}$

$3x + 9 = 4x + 4$

$5 = x$

$EG = x + 1$

$EG = 5$

$HG = x + 3$

$HG = 8$

INDIRECT MEASUREMENT For Exercises 7 and 8, use the following information.

A lighthouse casts a 128-foot shadow. A nearby lamppost that measures 5 feet 3 inches casts an 8-foot shadow.

$\frac{1}{4}$ of a foot .25

7. Write a proportion that can be used to determine the height of the lighthouse.

$\frac{x}{5.25} = \frac{128}{8}$

8. What is the height of the lighthouse?

$8x = 672$

$x = 84$ ft