

Name: _____

Date _____

Topic: Triangle Inequality Theorem - Worksheet 1

1. Lengths 13, 11, 10 could represent the measures of the sides of a triangle?

$$\begin{aligned} 13 + 11 &> 10 \\ 11 + 10 &> 13 \\ 13 + 10 &> 11 \end{aligned}$$

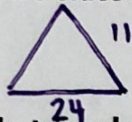
yes

2. In triangle K_LH, $\angle K = 40^\circ$ and $\angle K > \angle L$. Which is the smallest side of the triangle?



\overline{KH}

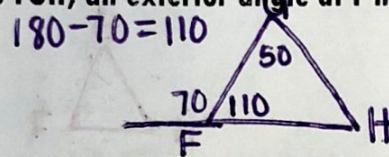
3. Two sides of an isosceles triangle measures 24 and 11. What is the possible value of the third side?



24

$$\begin{aligned} 11 + 11 &\neq 24 \\ 11 + 24 &> 24 \checkmark \end{aligned}$$

4. In triangle FGH, an exterior angle at F measures 70° , and $\angle G = 50^\circ$. Which is the longest side of the triangle?



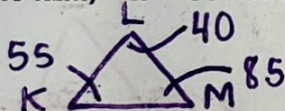
\overline{GH}

5. Lengths 16, 11, 18 could represent the measures of the sides of a triangle?

$$\begin{aligned} 16 + 11 &> 18 \\ 16 + 18 &> 11 \\ 11 + 18 &> 16 \end{aligned}$$

yes

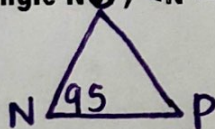
6. In triangle KLM, $\angle K = 55^\circ$ and $\angle L = 40^\circ$. Which is the longest side of the triangle?



$$180 - (40 + 55) = 85$$

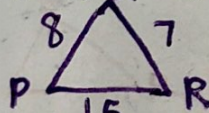
\overline{KL}

7. In triangle NOP, $\angle N = 95^\circ$ and $\angle N > \angle O > \angle P$. Which is the longest side of the triangle?



\overline{OP}

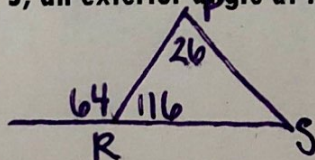
8. In ΔPQR , $PQ = 8$, $QR = 7$, $RP = 15$. Which is the largest angle?



$\angle Q$

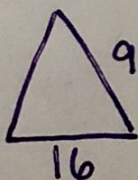
9. In triangle RPS, an exterior angle at R measures 64° , and $\angle P = 26^\circ$. Which is the longest side of the triangle?

$$180 - 64 = 116$$



\overline{PS}

10. Two sides of an isosceles triangle measures 16 and 9. What is the possible value of the third side?



$$\begin{aligned} 9 + 9 &> 16 \checkmark \\ 16 + 16 &> 9 \checkmark \end{aligned}$$

9 OR 16

