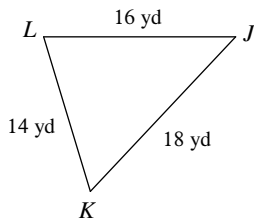


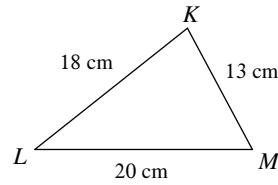
## Inequalities in One Triangle

Order the angles in each triangle from smallest to largest.

1)



2)

3) In  $\triangle RQP$ 

$QP = 15$  ft

$RP = 25$  ft

$RQ = 13$  ft

4) In  $\triangle TUV$ 

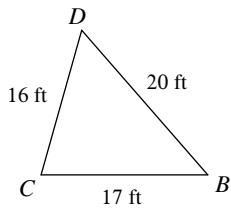
$UV = 17$  yd

$TV = 14$  yd

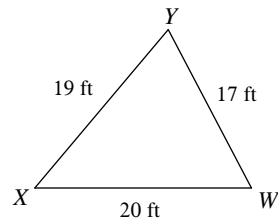
$TU = 9$  yd

Name the largest and smallest angle in each triangle.

5)



6)

7) In  $\triangle UVW$ 

$VW = 13$  m

$UW = 11.7$  m

$UV = 5.8$  m

8) In  $\triangle EFG$ 

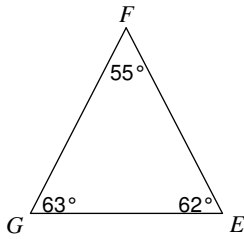
$FG = 10.9$  in

$EG = 17$  in

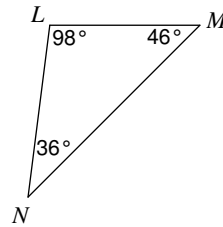
$EF = 10.9$  in

Order the sides of each triangle from shortest to longest.

9)



10)



11) In  $\triangle VWX$

$$m\angle V = 50^\circ$$

$$m\angle W = 48^\circ$$

$$m\angle X = 82^\circ$$

12) In  $\triangle STU$

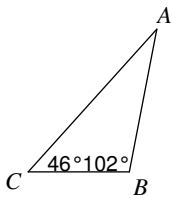
$$m\angle S = 50^\circ$$

$$m\angle T = 70^\circ$$

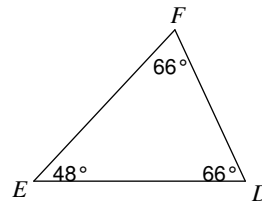
$$m\angle U = 60^\circ$$

Name the longest and shortest side in each triangle.

13)



14)



15) In  $\triangle DEF$

$$m\angle D = 35^\circ$$

$$m\angle F = 95^\circ$$

16) In  $\triangle KLM$

$$m\angle K = 50^\circ$$

$$m\angle L = 100^\circ$$

$$m\angle M = 30^\circ$$

**Critical thinking questions:**

17) In triangle ABC:

AB is the longest side.

$70^\circ$  is the measure of angle B.

Find the range of possible measures for angle A.

18) In triangle XYZ:

XY is the shortest side.

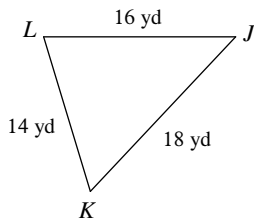
$30^\circ$  is the measure of angle Y.

Find the range of possible measures for angle X.

## Inequalities in One Triangle

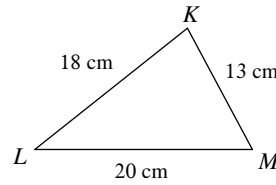
Order the angles in each triangle from smallest to largest.

1)



$\angle J, \angle K, \angle L$

2)



$\angle L, \angle M, \angle K$

3) In  $\triangle RQP$ 

$$QP = 15 \text{ ft}$$

$$RP = 25 \text{ ft}$$

$$RQ = 13 \text{ ft}$$

$\angle P, \angle R, \angle Q$

4) In  $\triangle TUV$ 

$$UV = 17 \text{ yd}$$

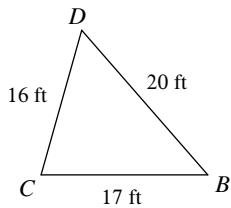
$$TV = 14 \text{ yd}$$

$$TU = 9 \text{ yd}$$

$\angle V, \angle U, \angle T$

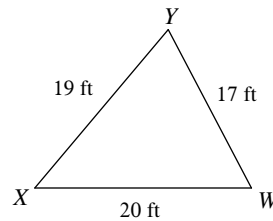
Name the largest and smallest angle in each triangle.

5)



$\angle C, \angle B$

6)



$\angle Y, \angle X$

7) In  $\triangle UVW$ 

$$VW = 13 \text{ m}$$

$$UW = 11.7 \text{ m}$$

$$UV = 5.8 \text{ m}$$

$\angle U, \angle W$

8) In  $\triangle EFG$ 

$$FG = 10.9 \text{ in}$$

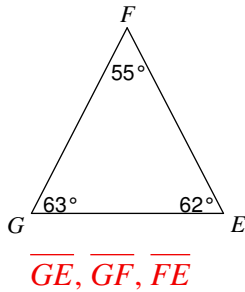
$$EG = 17 \text{ in}$$

$$EF = 10.9 \text{ in}$$

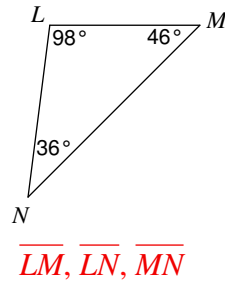
$\angle F; \angle E \text{ and } \angle G$

Order the sides of each triangle from shortest to longest.

9)



10)



11) In  $\triangle VWX$

$$m\angle V = 50^\circ$$

$$m\angle W = 48^\circ$$

$$m\angle X = 82^\circ$$

$\overline{VX}, \overline{WX}, \overline{VW}$

12) In  $\triangle STU$

$$m\angle S = 50^\circ$$

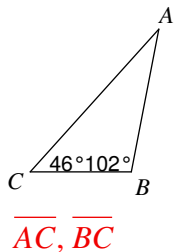
$$m\angle T = 70^\circ$$

$$m\angle U = 60^\circ$$

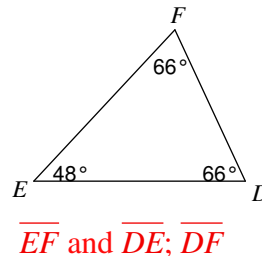
$\overline{TU}, \overline{ST}, \overline{SU}$

Name the longest and shortest side in each triangle.

13)



14)



15) In  $\triangle DEF$

$$m\angle D = 35^\circ$$

$$m\angle F = 95^\circ$$

$\overline{DE}, \overline{EF}$

16) In  $\triangle KLM$

$$m\angle K = 50^\circ$$

$$m\angle L = 100^\circ$$

$$m\angle M = 30^\circ$$

$\overline{KM}, \overline{KL}$

Critical thinking questions:

17) In triangle ABC:

AB is the longest side.

$70^\circ$  is the measure of angle B.

Find the range of possible measures for angle A.

$$0 < A < 40^\circ$$

18) In triangle XYZ:

XY is the shortest side.

$30^\circ$  is the measure of angle Y.

Find the range of possible measures for angle X.

$$0 < X < 150^\circ$$