

See the answers to the Practice Assignment on PAGE 3 below.

State if the given numbers can be the measures of the sides of a triangle.

1. 6, 3, 9
2. 11, 12, 11
3. 11, 7, 20
4. 12, 1, 12
5. 10, 7, 3

Two sides of a triangle are given. Find the range of possible measures for the third side.

6. 6, 6

Order the angles of the triangle from smallest to largest.

7. In triangle JLK, $JL = 16$, $KJ = 18$, $LK = 14$

Order the sides of the triangle from shortest to longest.

8. In triangle GEF, $\angle F = 55^\circ$, $\angle G = 63^\circ$, $\angle E = 62^\circ$

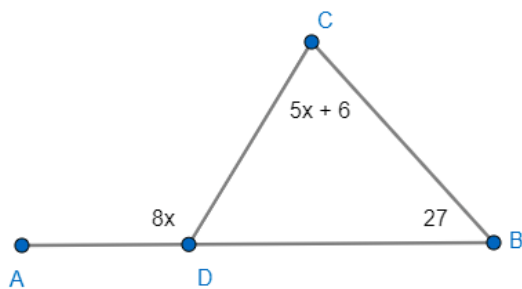
9. Triangle JLK has midsegment WX parallel to JL. $JL = 24$. Find the length of WX.

10. In triangle IJK, SR is a midsegment parallel to KI. $KI = 8$. Find the length of SR.

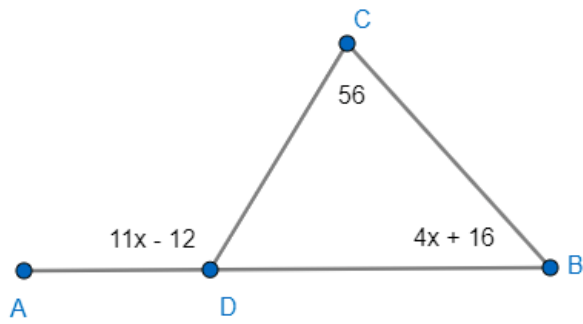
11. Triangle TSU has exterior angle EST. $m\angle EST = 95^\circ$, $m\angle U = 15^\circ$. Find the measure of angle T.

12. Triangle TSU has exterior angle JUT. $m\angle S = 20^\circ$, $m\angle T = 50^\circ$. Find the measure of angle JUT.

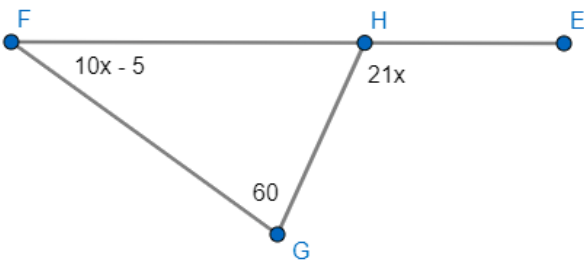
13. Solve for x.



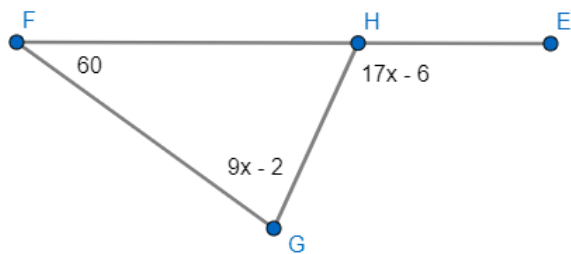
14. Solve for x.



15. Solve for x.



16. Find $m\angle G$



Answers:

1. no

$$6+3=9 \neq 9 \text{ not a } \triangle$$

2. yes

$$11+12=23 > 11, 11+11=22 > 12, \text{ yes a } \triangle$$

3. no

$$11+7=18 \neq 20 \text{ not a } \triangle$$

4. yes

$$12+1=13 > 12, 12+12=24 > 1, \text{ yes a } \triangle$$

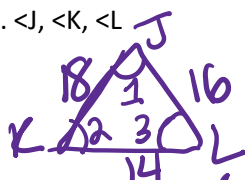
5. no

$$7+3 \neq 10, \text{ not a } \triangle$$

6. $0 < x < 12$

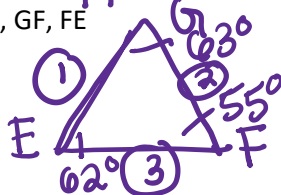
$$6+6=12 \text{ anything between 0 and 12 will work}$$

7. $\angle J, \angle K, \angle L$



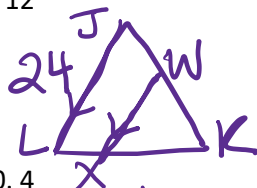
$$\angle J, \angle K, \angle L$$

8. GE, GF, FE



$$GE, GF, FE$$

9. 12



$$JL = 2WX$$

$$\frac{24}{2} = \frac{2WX}{2}$$

$$WX = 12$$

10. 4

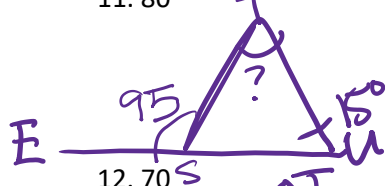


$$KI = 2SR$$

$$\frac{8}{2} = \frac{2SR}{2}$$

$$SR = 4$$

11. 80

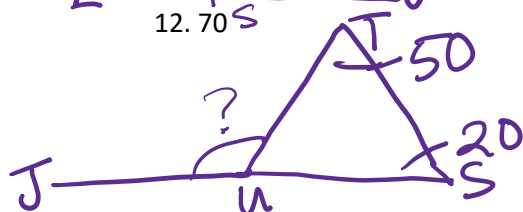


$$95 = 15 + \angle T$$

$$-15 - 15$$

$$\angle T = 80$$

12. 70



$$m\angle JUT = 50 + 20$$

$$= 70$$

13. 11

$$\begin{array}{r}
 5x + 6 + 27 = 8x \\
 -5x \quad -5x \\
 \hline
 33 = 3x \\
 3 \quad 3
 \end{array}$$

$$\boxed{x=11}$$

14. 12

$$\begin{array}{r}
 56 + 4x + 16 = 11x - 12 \\
 4x + 72 = 11x - 12 \\
 -4x \quad -4x \\
 \hline
 84 = 7x
 \end{array}$$

$$\begin{array}{r}
 72 = 7x - 12 \\
 +12 \quad +12 \\
 \hline
 84 = 7x \\
 \frac{84}{7} = \frac{7x}{7}
 \end{array}$$

$$\boxed{x=12}$$

15. 5

$$\begin{array}{r}
 10x - 5 + 60 = 21x \\
 10x + 55 = 21x \\
 -10x \quad -10x \\
 \hline
 55 = 11x
 \end{array}$$

$$\begin{array}{r}
 55 = 11x \\
 \frac{55}{11} = \frac{11x}{11}
 \end{array}$$

$$\boxed{x=5}$$

16. 70

$$60 + 9x - 2 = 17x - 6$$

$$\begin{array}{r}
 9x + 58 = 17x - 6 \\
 -9x \quad -9x \\
 \hline
 58 = 8x - 6
 \end{array}$$

$$\begin{array}{r}
 58 = 8x - 6 \\
 +6 \quad +6 \\
 \hline
 64 = 8x
 \end{array}$$

$$\begin{array}{r}
 64 = 8x \\
 \frac{64}{8} = \frac{8x}{8}
 \end{array}$$

$$x=8$$

$$\begin{array}{r}
 m\angle G = 9x - 2 \\
 = 9(8) - 2
 \end{array}$$

$$m\angle G = 72 - 2$$

$$\boxed{m\angle G = 70}$$