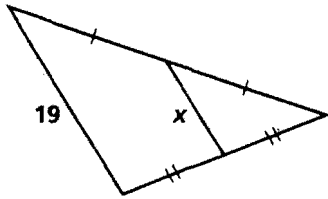


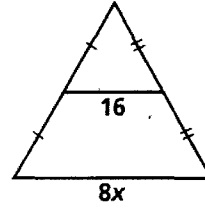
**Geometry – Chapter 5.4 and 5.5 Review Sheet**  
**SOLUTIONS ARE GIVEN AT THE END OF THIS DOCUMENT**

Find the value of  $x$ .

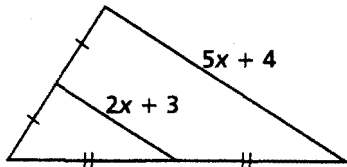
1.



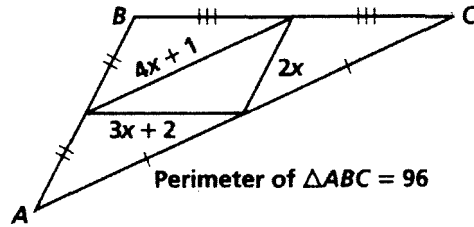
2.



3.



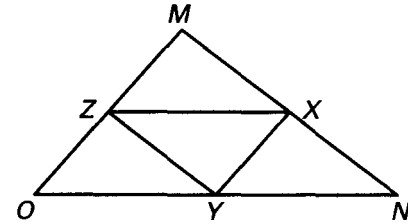
4.



5. In  $\triangle MNO$ ,  $X$ ,  $Y$ , and  $Z$  are midpoints.

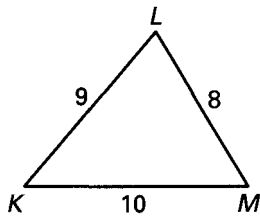
a) If  $XY = 3x + 1$ , and  $MO = 10x - 6$ , then  $XY =$  \_\_\_\_\_

b) If  $m\angle MON = 48^\circ$ , then  $m\angle MZX =$  \_\_\_\_\_

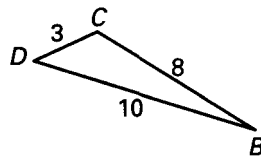


6. List the angles of each triangle from smallest to largest.

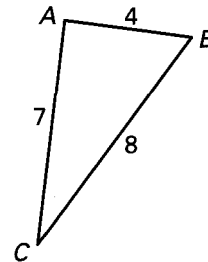
a)



b)

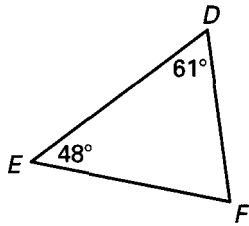


c)

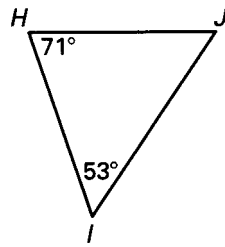


7. List the sides of each triangle from longest to shortest.

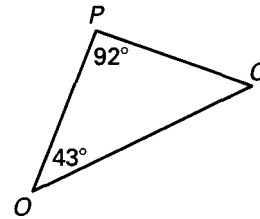
a)



b)



c)



8. In  $\triangle ABC$ ,  $m\angle A = 12x - 9$ ,  $m\angle B = 63 - 3x$ ,  $m\angle C = 16x + 2$ .

List the sides of the triangle from longest to shortest.

9. Determine if the following lengths can be used to make a triangle.

- |                 |                 |                  |
|-----------------|-----------------|------------------|
| a) 3, 4, 5      | b) 10, 150, 200 | c) 12, 2.2, 14.3 |
| d) 10, 100, 100 | e) 5, 10, 15    | f) 84, 7, 115    |

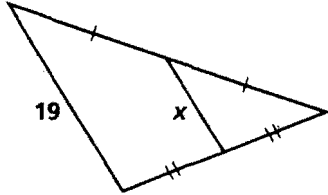
10. Determine the range of possible values for the 3<sup>rd</sup> side of each triangle given sides of

- |            |              |              |              |
|------------|--------------|--------------|--------------|
| a) 3 and 7 | b) 10 and 17 | c) 12 and 20 | d) 15 and 20 |
|------------|--------------|--------------|--------------|

## Geometry – Chapter 5.4 and 5.5 Review Sheet

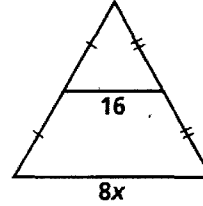
Find the value of  $x$ . Recall that the midsegment is half the measure of the opposite side.

1.



$$x = \frac{1}{2}(19) = 9.5$$

2.

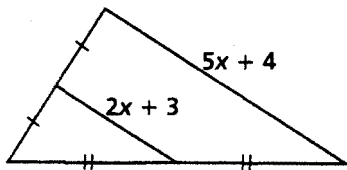


$$16 = \frac{1}{2}(8x)$$

$$16 = 4x$$

$$x = 4$$

3.

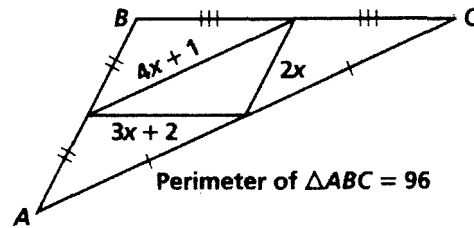


$$5x + 4 = 2(2x + 3)$$

$$5x + 4 = 4x + 6$$

$$x = 2$$

4.



Perimeter of  $\triangle ABC = 96$

$$(4x + 1) + (3x + 2) + 2x = \frac{1}{2}(96) = 48$$

$$9x + 3 = 48$$

$$9x = 45$$

$$x = 5$$

5. In  $\triangle MNO$ ,  $X$ ,  $Y$ , and  $Z$  are midpoints.

a) If  $XY = 3x + 1$ , and  $MO = 10x - 6$ , then  $XY =$  \_\_\_\_\_

$$10x - 6 = 2(3x + 1)$$

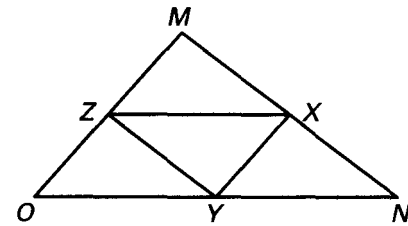
$$10x - 6 = 6x + 2$$

$$4x = 8$$

$$x = 2$$

b) If  $m\angle MON = 48^\circ$ , then  $m\angle MZX =$  \_\_\_\_\_

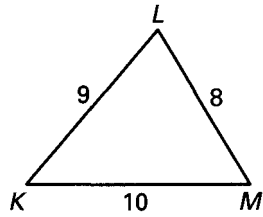
48 degrees because corresponding angles are equal



6. List the angles of each triangle from smallest to largest.

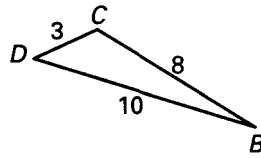
Recall that the longest side is opposite the largest angle and vice-versa.

a)



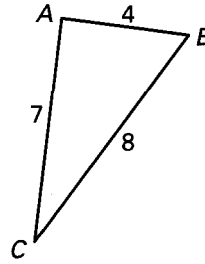
K, M, L

b)



B, D, C

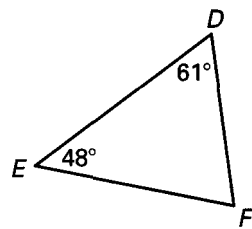
c)



C, B, A

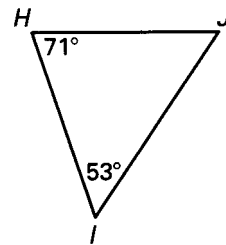
7. List the sides of each triangle from longest to shortest.

a)



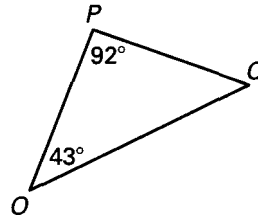
DE, EF, DF

b)



IJ, HI, HJ

c)



QO, OP, PQ

8. In  $\triangle ABC$ ,  $m\angle A = 12x - 9$ ,  $m\angle B = 63 - 3x$ ,  $m\angle C = 16x + 2$ .

List the sides of the triangle from longest to shortest.

$$(12x - 9) + (63 - 3x) + (16x + 2) = 180$$

$$25x + 56 = 180$$

$$25x = 124$$

$$x = 4.96$$

So  $A = 50.52$ ,  $B = 48.12$  and  $C = 81.36$  which means the answer is AB, BC, AC

9. Determine if the following lengths can be used to make a triangle.

Recall that two sides of any triangle must be greater than the 3<sup>rd</sup> side. You must check all possible sums of the two sides of each triangle to determine whether it can be a triangle.

- a) 3, 4, 5 YES                      b) 10, 150, 200 NO              c) 12, 2.2, 14.3 NO  
d) 10, 100, 100 YES              e) 5, 10, 15 NO                  f) 84, 7, 115 NO

**Explanations:**

- b)  $10 + 150$  is not greater than 200  
c)  $12 + 2.2$  is not greater than 14.3  
e)  $5 + 10$  is not greater than 15  
f)  $84 + 7$  is not greater than 115

10. Determine the range of possible values for the 3<sup>rd</sup> side of each triangle given sides of

- a) 3 and 7                      b) 10 and 17                      c) 12 and 20                      d) 15 and 20

The Triangle Inequality Theorem says that if the sides of a triangle are  $a$ ,  $b$  and  $c$ , then the length of  $c$  must be between  $a - b$  and  $a + b$ .

So the answers are:

- a) any number between 4 and 11 ( $7-3 = 4$  and  $7+3 = 10$ )  
b) any number between 7 and 27 ( $17-10 = 7$  and  $17+10 = 27$ )  
c) any number between 8 and 32 ( $20-12 = 8$  and  $20+12 = 32$ )  
d) any number between 5 and 35 ( $20-15 = 5$  and  $20+15 = 35$ )