

## Section 5.1: Midsegments of Triangles

Name \_\_\_\_\_

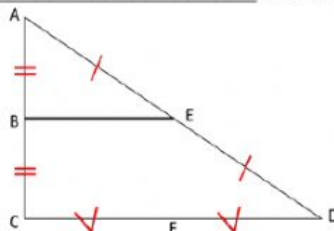
Learning Targets:

I will be able to use properties of midsegments of triangles to solve problems.

What vocabulary word comes to mind when you hear the word midsegment?

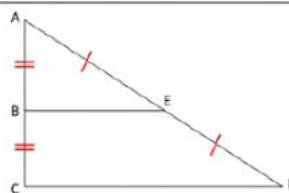
**Midsegment** – a segment connecting the \_\_\_\_\_ of two sides of a triangle.

\_\_\_\_\_ is a midsegment of  $\triangle ACD$ .

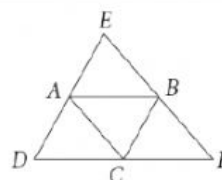


### Triangle Midsegment Theorem

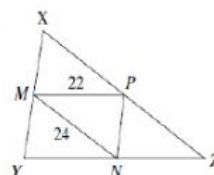
If a segment joins the midpoints of two sides of a triangle, then the segment is \_\_\_\_\_ to the third side and \_\_\_\_\_ its length.



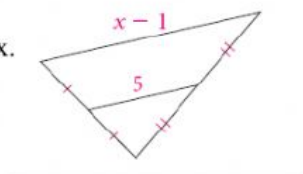
- 1) In  $\triangle DEF$  A, B, and C are midpoints. Name pairs of parallel segments.



- 2) Given triangle MNP has a perimeter of 60cm what is the perimeter of triangle XYZ



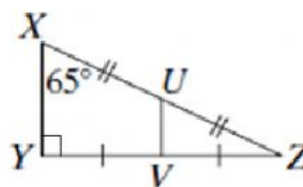
- 3) Find the value of x.



- 4) Find the measure of the following angles:

$$m\angle VUZ =$$

$$m\angle Z =$$



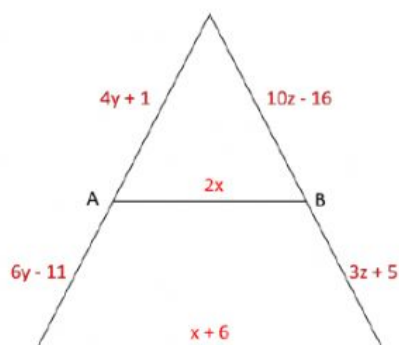
For the following examples assume segments that look like midsegments are midsegments.

5) Solve for  $x$ ,  $y$  and  $z$ .

$x =$

$y =$

$z =$

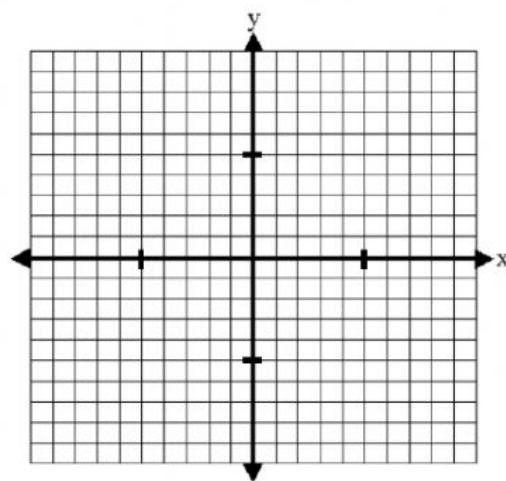


6) The vertices of a triangle are  $A(-5, 1)$ ,  $B(-5, 7)$  and  $C(3, 3)$ .

What is the midpoint of  $AB$ ?

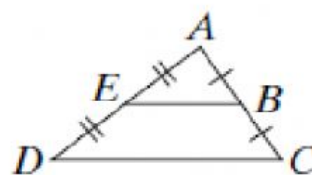
What is the midpoint of  $AC$ ?

Is the midsegment created by these midpoints parallel to  $BC$ ?

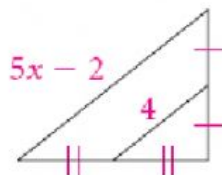


### **PRACTICE!**

7) Given  $AB = 10$ ,  $CD = 18$  find the measures of  $EB$ ,  $BC$  and  $AC$



8) Find the value of  $x$ .

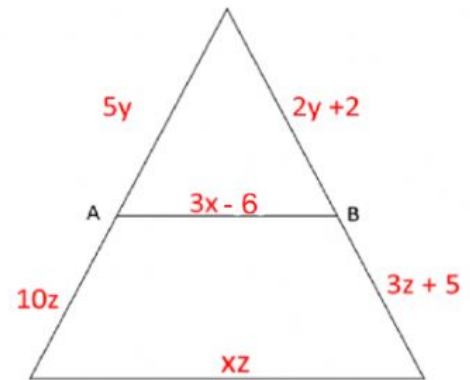


9) Solve for  $x$ ,  $y$  and  $z$ .

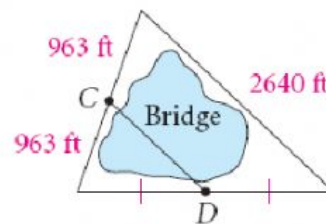
$x =$

$y =$

$z =$



10)  $\overline{CD}$  is a new bridge being built over a lake as shown. Find the length of the bridge.

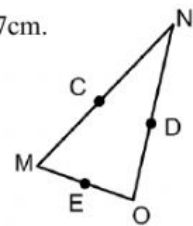


11) In  $\triangle MNO$ , the points, C, D, and E, are midpoints.  $CD = 4\text{cm}$ ,  $CE = 8\text{cm}$ , and  $DE = 7\text{cm}$ .

a) Find  $MO$ .

b) Find  $NO$ .

c) Find  $MN$ .

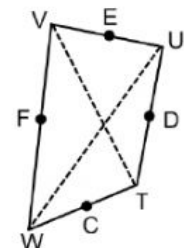


12) In quadrilateral  $WVUT$ , the points F, E, D, and C are midpoints.  $WU = 45$  inches and  $TV = 31$  inches.

a) Find  $CD$ .

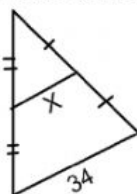
b) Find  $CF$ .

c) Find  $ED$ .



13) Find the value of the variable

a)



b)

