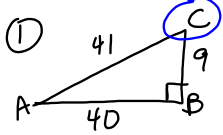
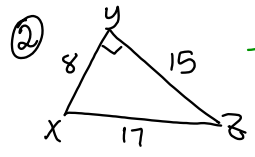
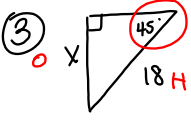
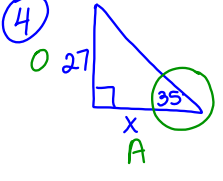


①   $\cos C = \frac{9}{41}$

②   $\frac{8}{15}$   
 ~~$\sin X$~~   
 ~~$\sin Z$~~   
 ~~$\tan X$~~   
 ~~$\tan Z$~~

③   $\frac{18 \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}} = \frac{18\sqrt{2}}{2} = 9\sqrt{2}$   
 $19 \sin 45^\circ = \frac{x}{18} \cdot 18$   
 $12.73 = x$

④   $\tan 35^\circ = \frac{27}{x}$   
 $x = \frac{27}{\tan 35^\circ}$   
 $x \approx 38.56$

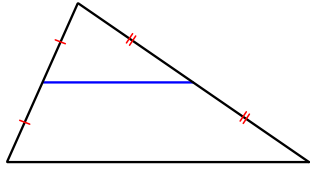
# Midsegments of Triangles

Jan 12-8:14 AM

title

Midsegment of a triangle—a segment that connects the midpoints of two sides of a triangle

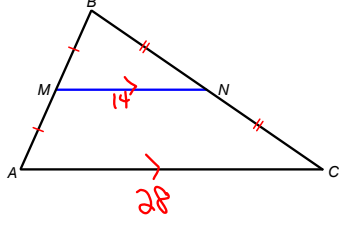
➤ Every triangle has three midsegments.



midsegment

**Midsegment Theorem**

The segment connecting the midpoints of two sides of a triangle is parallel to the third side and is half as long.



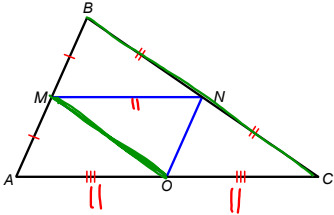
midsegment thm

Complete the statement.

$\overline{MO} \parallel \underline{BC}$

$\overline{BA} \parallel \underline{NO}$

$\overline{MN} \cong \underline{AO} \cong \underline{OC}$



If  $AB = 16$ , then  $ON = \underline{8}$

If  $MO = 13$ , then  $BC = \underline{26}$

If  $OC = 11$ , then  $MN = \underline{11}$

examples

Find the indicated side length.

If  $MN = 3x + 8$  and  $AC = 9x - 5$ , what is  $MN$ ?

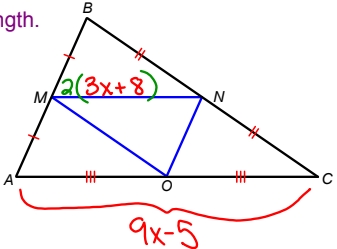
$2(3x + 8) = 9x - 5$

$6x + 16 = 9x - 5$

$21 = 3x$

$7 = x$

$MN = 3(7) + 8 = 29$



examples

**Conclusion**

- What is a midsegment?  
*segment that connects midpt of 2 sides of a  $\Delta$*
- Name something true about a midsegment.
  - Every  $\Delta$  has 3*
  - parallel to opposite side*
  - $\frac{1}{2}$  as long as opp side*
- Questions????

# Assignment

## Midsegment Wkst