

Midsegment

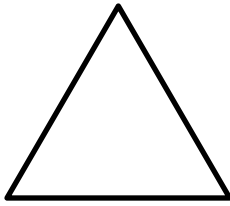
Midsegment  
Theorem

Midsegment

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## Midsegment:

A segment that connects the midpoints of two sides of the triangle.



1 Use  $\triangle ABC$ , where  $X, Y, Z$  are midpoints of the sides.

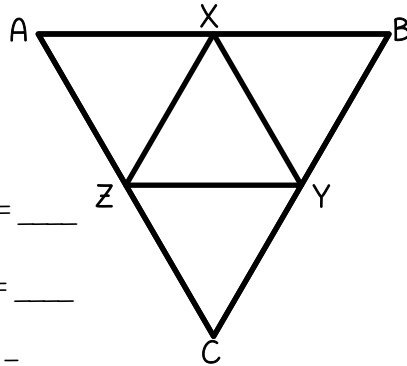
a)  $\overline{XY} \parallel$  \_\_\_\_

b)  $\overline{CB} \parallel$  \_\_\_\_

c) If  $\overline{ZY} = 6$ , then  $\overline{AB} =$  \_\_\_\_

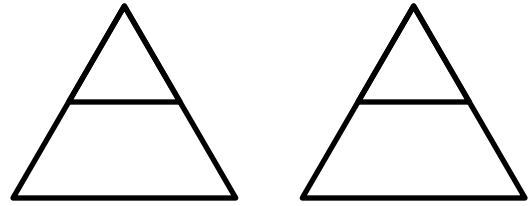
d) If  $\overline{CY} = 7$ , then  $\overline{ZX} =$  \_\_\_\_

e) If  $\overline{AC} = 18$ , then  $\overline{XY} =$  \_\_\_\_



## Midsegment Theorem:

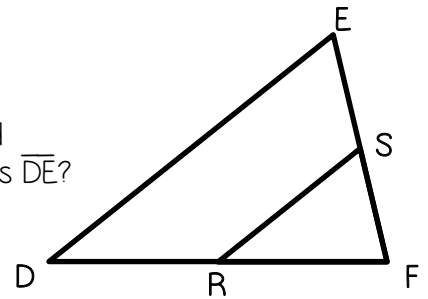
The segment connecting the midpoints of two sides of a triangle is parallel to the third side and is half as long as that side.



2 In the diagram below,  $\overline{RS}$  is the midpoint of  $\triangle DEF$ .

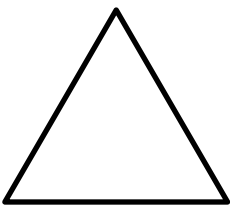
a) If  $\overline{RS}$  is  $4x + 5$  and  $\overline{DE}$  is  $3x + 25$ , what is  $RS$ ?

B) If  $\overline{DE} = 2x + 11$  and  $\overline{RS} = 8x - 2$ , what is  $\overline{DE}$ ?



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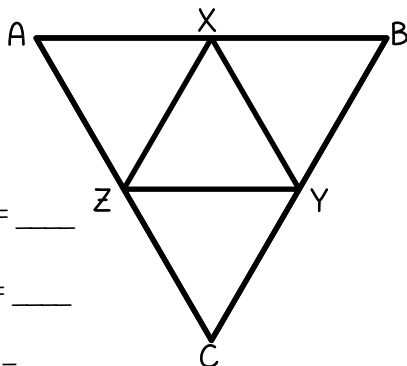
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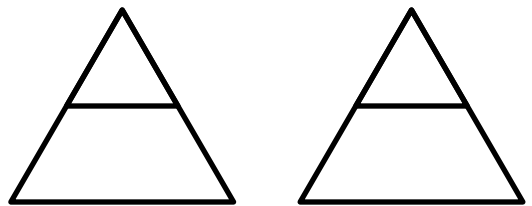
d) If  $\overline{CY} = 7$ , then  $\overline{ZX} =$  \_\_\_\_

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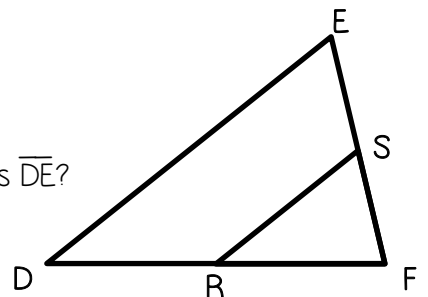
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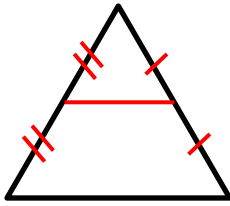
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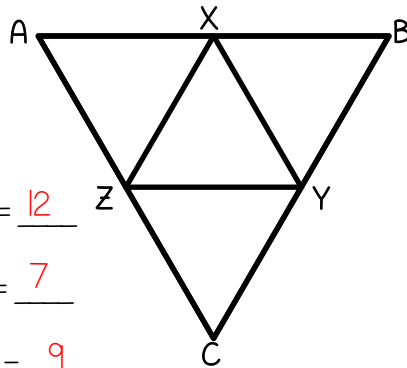
a)  $\overline{XY} \parallel \overline{AC}$

b)  $\overline{CB} \parallel \overline{ZX}$

c) If  $\overline{ZY} = 6$ , then  $\overline{AB} = 12$

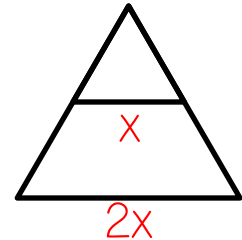
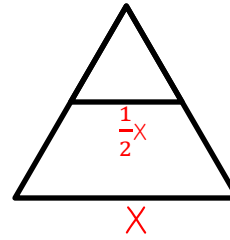
d) If  $\overline{CY} = 7$ , then  $\overline{ZX} = 7$

e) If  $\overline{AC} = 18$ , then  $\overline{XY} = 9$



## Midsegment Theorem:

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



2 In the diagram below,  $\overline{RS}$  is the midpoint of  $\triangle DEF$ .

a) If  $\overline{RS} = 4x + 5$  and  $\overline{DE} = 3x + 25$ , what is  $\overline{RS}$ ?

$$2(4x + 5) = 3x + 25$$

$$x = 3$$

$$\overline{RS} = 4x + 5$$

$$\overline{RS} = 4(3) + 5$$

$$\overline{RS} = 17$$

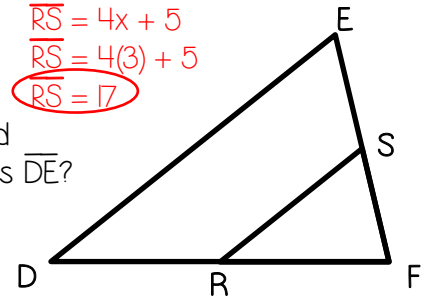
B) If  $\overline{DE} = 2x + 12$  and  $\overline{RS} = 2x - 2$ , what is  $\overline{DE}$ ?

$$2x + 12 = 2(2x - 2)$$

$$x = 4$$

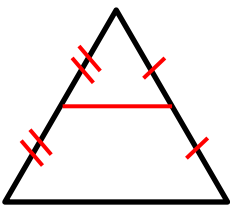
$$\overline{DE} = 2x + 12$$

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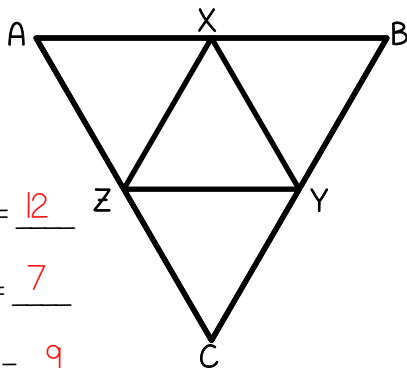
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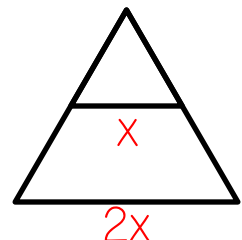
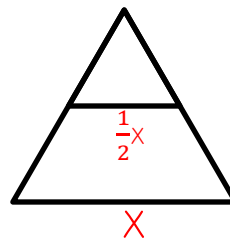
d) If  $\overline{CY} = 7$ , then  $\overline{ZX} = 7$

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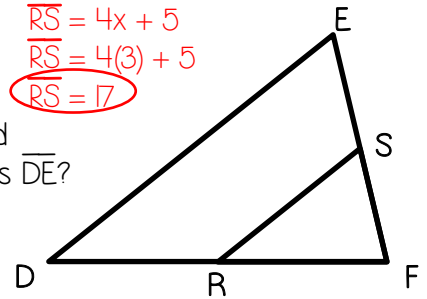
B) If  $\overline{DE} = 2x + 12$  and  $\overline{RS} = 2x - 2$ , what is  $\overline{DE}$ ?

$$2x + 12 = 2(2x - 2)$$

$$x = 4$$

$$\overline{DE} = 2x + 12$$

$$\overline{DE} = 20$$



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Print pages 1 & 2 double sided. (3 & 4 for the answer key) Choose the option to flip along the short edge. Cut the pages in half (along the dotted line) to create two foldables. Have students fold the page in half and cut along the dotted line on the top layer, creating two flaps. I suggest printing a single copy- fold, and cut to ensure it has been photocopied properly. Foldables can sometimes be tricky!

The final product should look like this:

