

## Unit 4 Lesson 4 – Midpoint and Distance

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- Midpoint: the point in the \_\_\_\_\_ of two points

1. To find the midpoint:

- X - value = \_\_\_\_\_ the x-values and divide by \_\_\_\_\_
- Y-value = \_\_\_\_\_ they y-values and divide by \_\_\_\_\_
  - Midpoint = ( \_\_\_\_\_ , \_\_\_\_\_ )

- EXAMPLES

1. Find the midpoint of the line created by the points ( - 4, -6) and (10, 14)

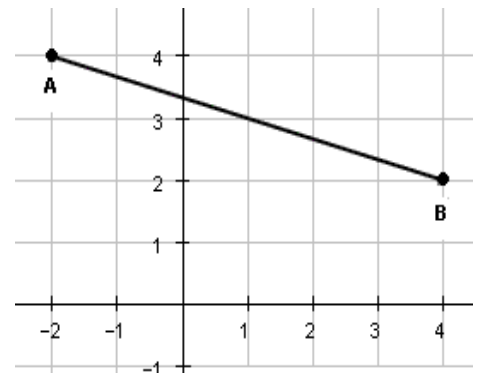
- Midpoint = ( \_\_\_\_\_ , \_\_\_\_\_ )

2. Find the midpoint of the line created by the points (9, 0) and (-1, 3)

- Midpoint = ( \_\_\_\_\_ , \_\_\_\_\_ )

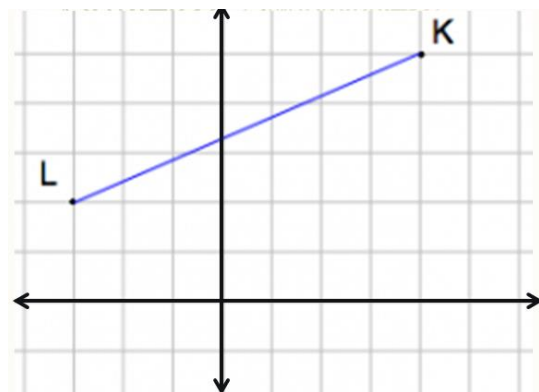
3. Find the midpoint of AB graphed to the right.

- Point A = \_\_\_\_\_ Point B = \_\_\_\_\_
- Midpoint = ( \_\_\_\_\_ , \_\_\_\_\_ )



4. Find the midpoint of LK graphed to the right.

- Point L = \_\_\_\_\_ Point K = \_\_\_\_\_
- Midpoint = ( \_\_\_\_\_ , \_\_\_\_\_ )



### Distance Formula

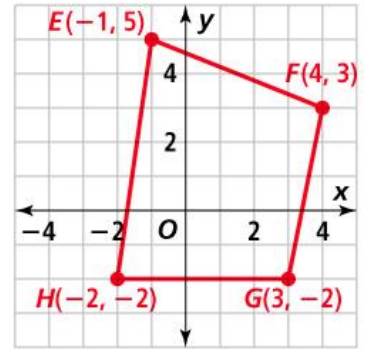
- Formula for Finding the Distance between two point:

- Find the distance between (4, -7) & (10,5)

- Find the distance between (3, 1) and (-8,4)

**Applications of the Distance Formula:**

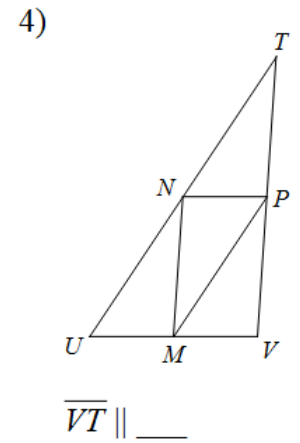
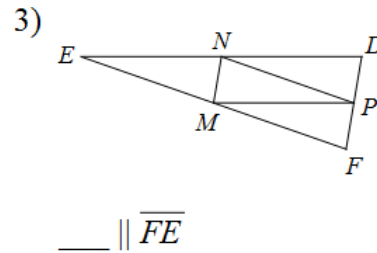
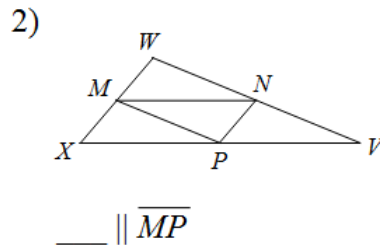
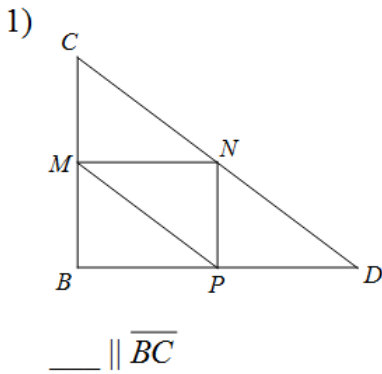
You are building a fence to enclose an area as shown in the diagram. Approximately, how many feet of fencing will be required?



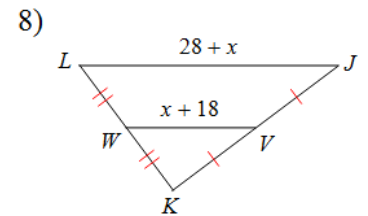
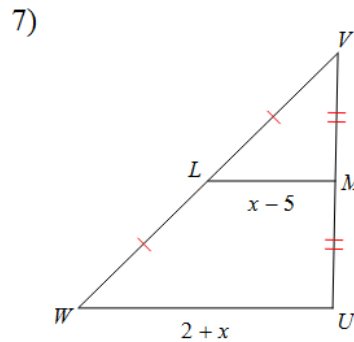
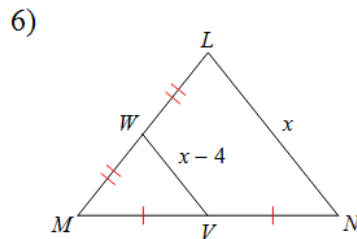
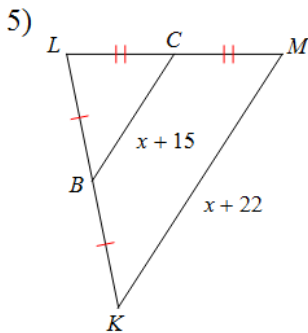
**Triangle Midsegment Theorem**

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

In each triangle, M, N, and P are the midpoints of the sides. Name a segment parallel to the one given.

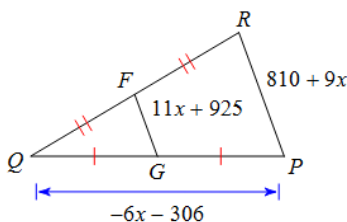


Each triangle below has a midsegment. Using the triangle midsegment theorem, find the value of x.

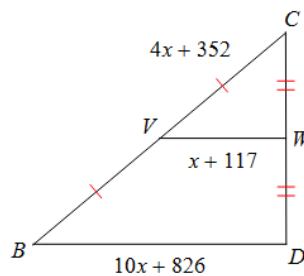


Find the length of the side indicated.

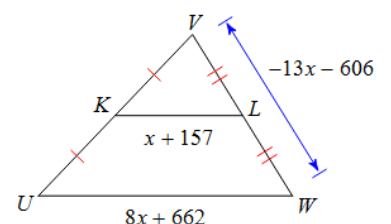
9) Find PR



10) Find VW



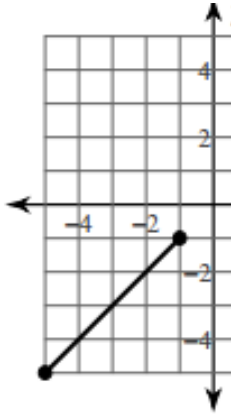
11) Find KL



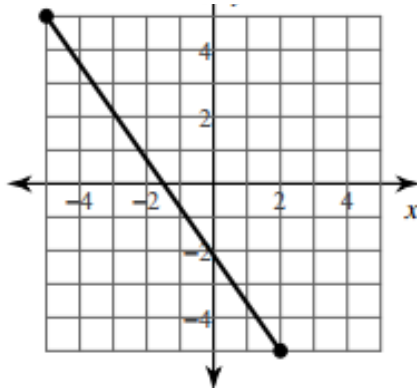
# Unit 4 Lesson 4 Practice – Midpoint, Distance, and Triangle Midsegment

Find the midpoint and length of each line segment below:

1) Midpoint: \_\_\_\_\_



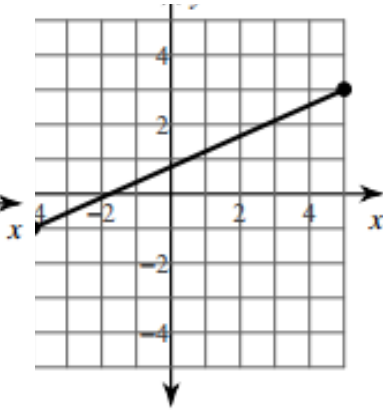
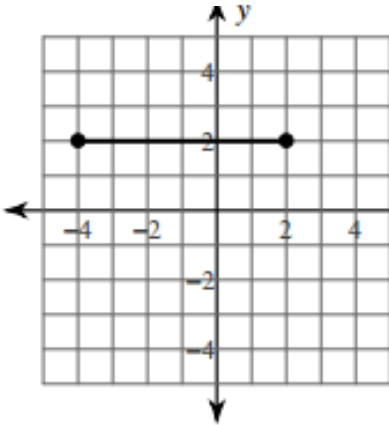
Distance: \_\_\_\_\_  
Midpoint: \_\_\_\_\_ Distance: \_\_\_\_\_



Distance: \_\_\_\_\_

Midpoint: \_\_\_\_\_ Distance: \_\_\_\_\_

Distance: \_\_\_\_\_



Find the Distance and Midpoint of the two points below:

5)  $(-4, 4), (5, -1)$

Midpoint = \_\_\_\_\_

Distance = \_\_\_\_\_

6)  $(2, 4), (1, -3)$

Midpoint = \_\_\_\_\_

Distance = \_\_\_\_\_

7)  $(5, 2), (-4, -3)$

Midpoint = \_\_\_\_\_

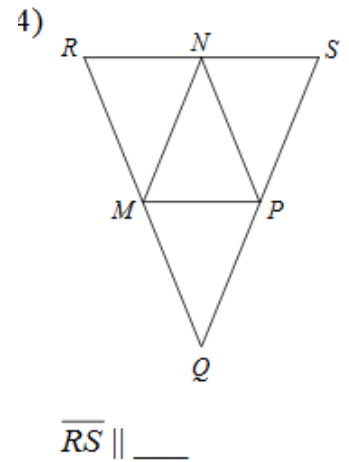
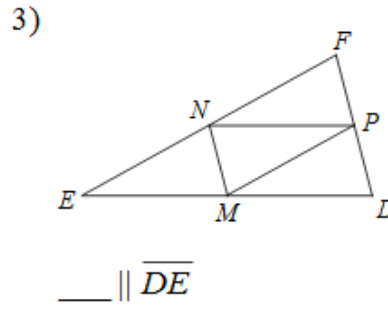
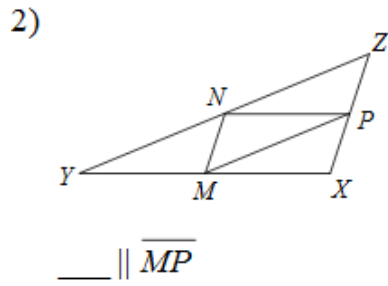
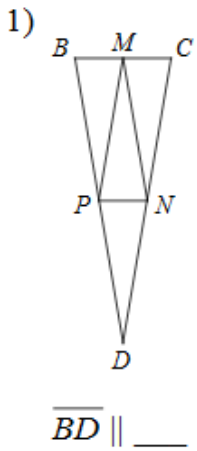
Distance = \_\_\_\_\_

8)  $(-1, -6), (-6, 5)$

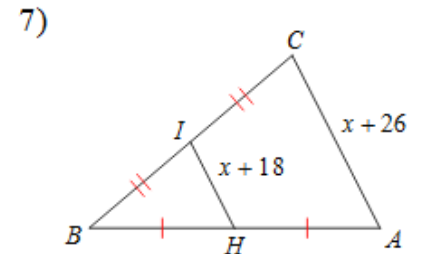
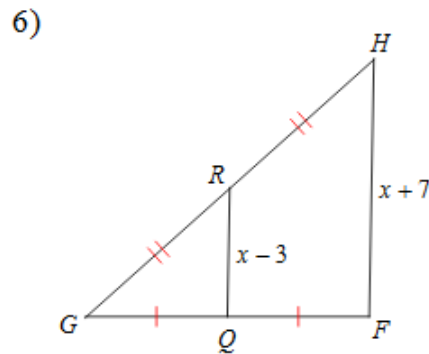
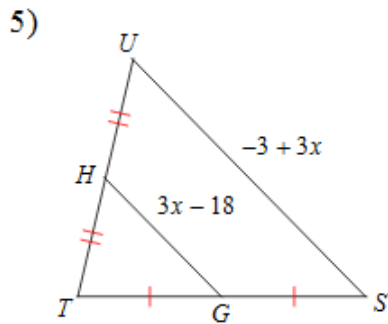
Midpoint = \_\_\_\_\_

Distance = \_\_\_\_\_

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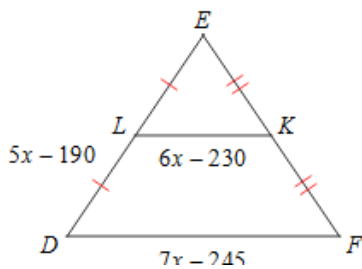


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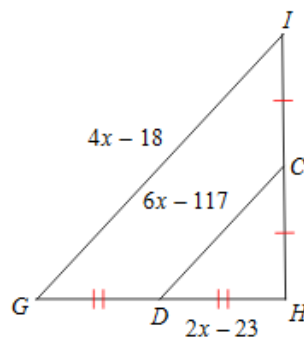


Find the length of the side indicated.

8) Find  $DF$



9) Find  $CD$



10) Find  $ST$

