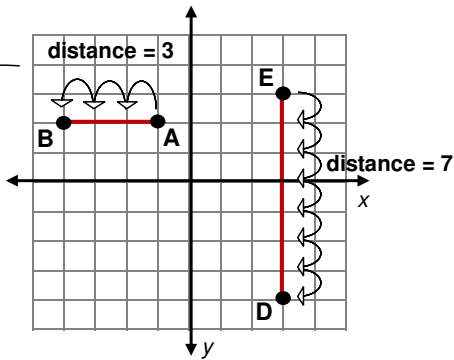


# INTRODUCTION TO DISTANCE OF LINE SEGMENTS

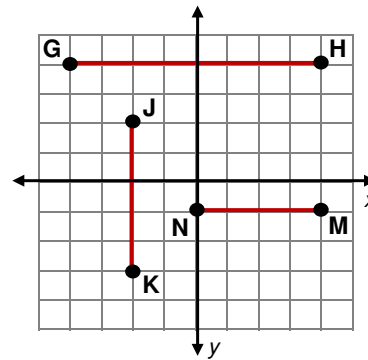
# ANSWERS



THE EASIEST WAY TO FIND THE LENGTH OF A LINE SEGMENT IS TO COUNT THE DISTANCE FROM ONE POINT TO THE OTHER.



Now your turn. Find the distance for each line segment.

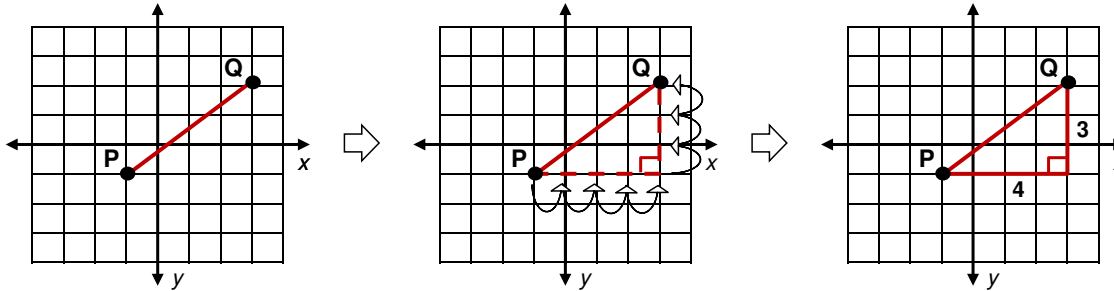


- Distance  $\overline{GH}$   
**8**
- Distance  $\overline{JK}$   
**5**
- Distance  $\overline{MN}$   
**4**

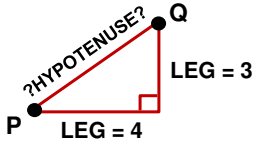


UNFORTUNATELY, IT IS NOT ALWAYS THIS EASY. WE CAN NOT USE THIS SIMPLE COUNTING METHOD WHEN THE LINE SEGMENT IS DIAGONAL.

BUT IF YOU LOOK CLOSELY, YOU CAN SEE WE CAN CREATE A RIGHT TRIANGLE AND THEN USE THE PYTHAGOREAN THEOREM TO FIND THE LENGTH OR DISTANCE OF THE LINE SEGMENT.



Pythagorean Theorem  
 $c^2 = a^2 + b^2$   
 OR  
 $c = \sqrt{a^2 + b^2}$



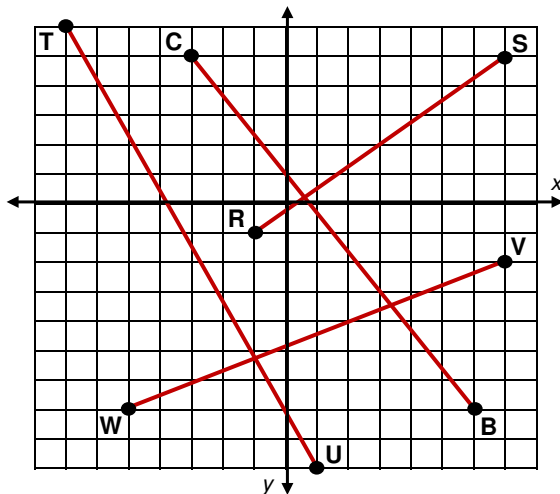
Pythagorean Theorem  $\rightarrow c^2 = a^2 + b^2 \rightarrow c^2 = 4^2 + 3^2 \rightarrow c = \sqrt{4^2 + 3^2}$   
 $c = \sqrt{16 + 9} \rightarrow c = \sqrt{25} \rightarrow c = 5$

DISTANCE  $\overline{PQ} = 5$

DID YOU SEE HOW WE COUNTED THE DISTANCE FOR THE LEGS AND PLACED THE AMOUNTS INTO THE PYTHAGOREAN THEOREM? WE THEN SOLVED FOR "c" WHICH IS THE DISTANCE BETWEEN POINT P AND Q.



Now your turn. Find the distance for each line segment.



- Distance  $\overline{RS}$   
**10**
- Distance  $\overline{TU}$   
**17**
- Distance  $\overline{VW}$   
**13**
- Distance  $\overline{BC}$   
**15**