

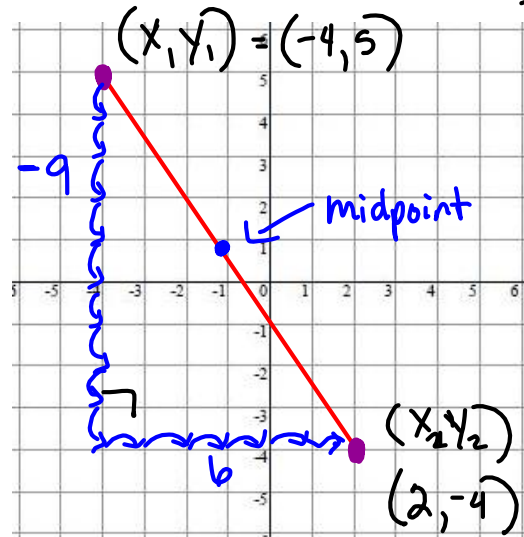
# 6.7 Polygons in the Coordinate Plane \*EOC

recall

Slope formula:

$$\frac{\text{rise}}{\text{run}} = \frac{\Delta Y}{\Delta X} = \frac{-9}{6} = \boxed{-\frac{3}{2}}$$

$$\frac{Y_2 - Y_1}{X_2 - X_1} = \frac{-4 - 5}{2 - (-4)} = \frac{-9}{6} = \boxed{-\frac{3}{2}}$$



Parallel Slopes: SAME!!

$$\frac{1}{2} \parallel \frac{1}{2}$$

Perpendicular Slope: opp sign / flip fraction

$$\frac{1}{2} \perp -\frac{2}{1}$$

Midpoint formula:  
(average of 2 #'s)

$$\left( \frac{X_1 + X_2}{2}, \frac{Y_1 + Y_2}{2} \right) = \left( \frac{-4 + 2}{2}, \frac{5 + (-4)}{2} \right) = \left( -1, \frac{1}{2} \right)$$

Short-cut  
Slope  $\frac{-9}{6}$  (whole)  $\frac{-4.5}{1}$  (1/2) =  $-\frac{4.5}{3}$   
\*apply the 1/2 slope

Distance formula:  
Use pyth. thm!!!

form a right  $\Delta$

$$a^2 + b^2 = c^2$$

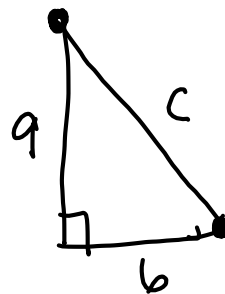
$$9^2 + 6^2 = c^2$$

$$81 + 36 = c^2$$

$$\sqrt{117} = \sqrt{c^2}$$

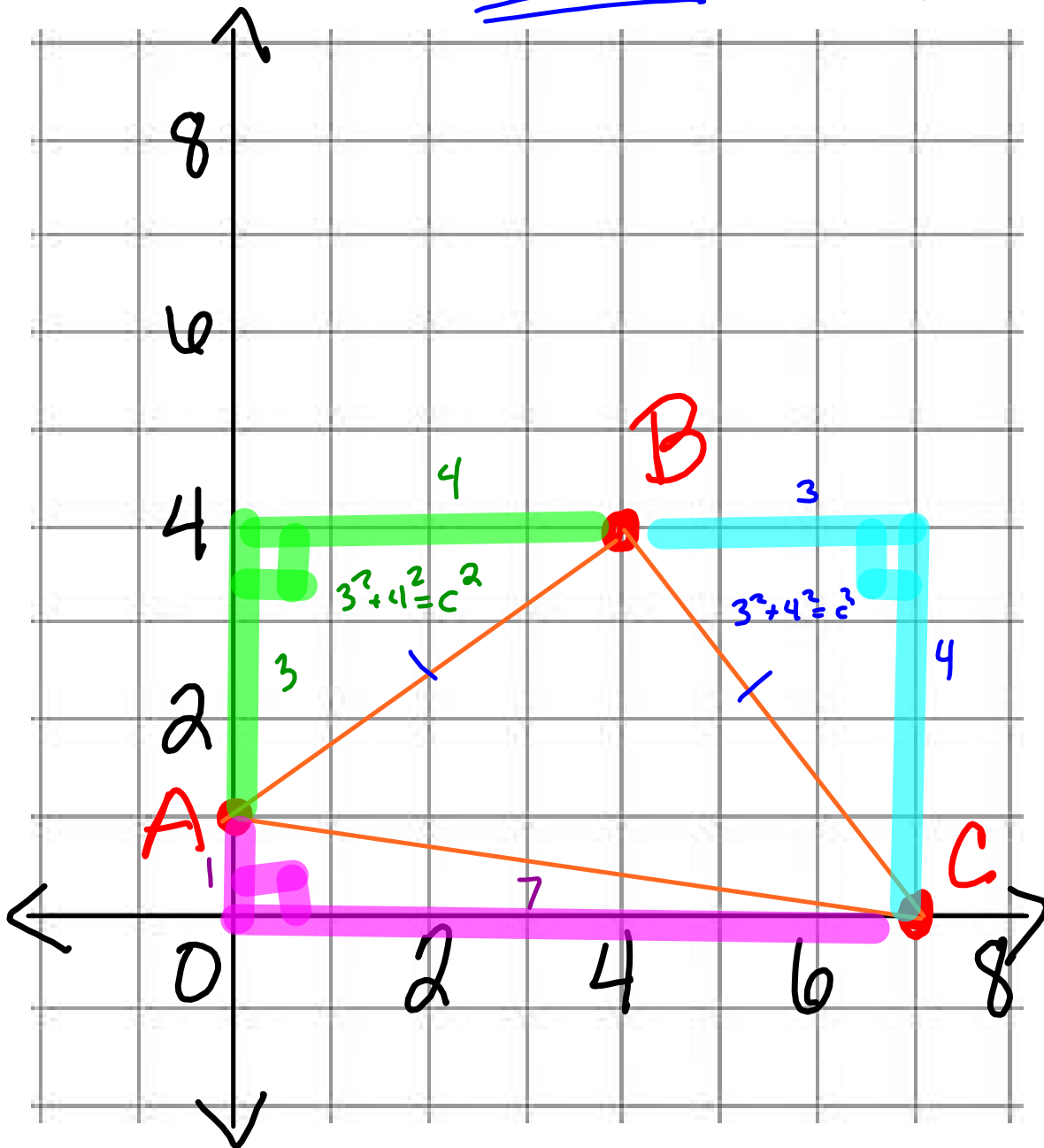
$$c = 10.8 = \text{distance}$$

from Above

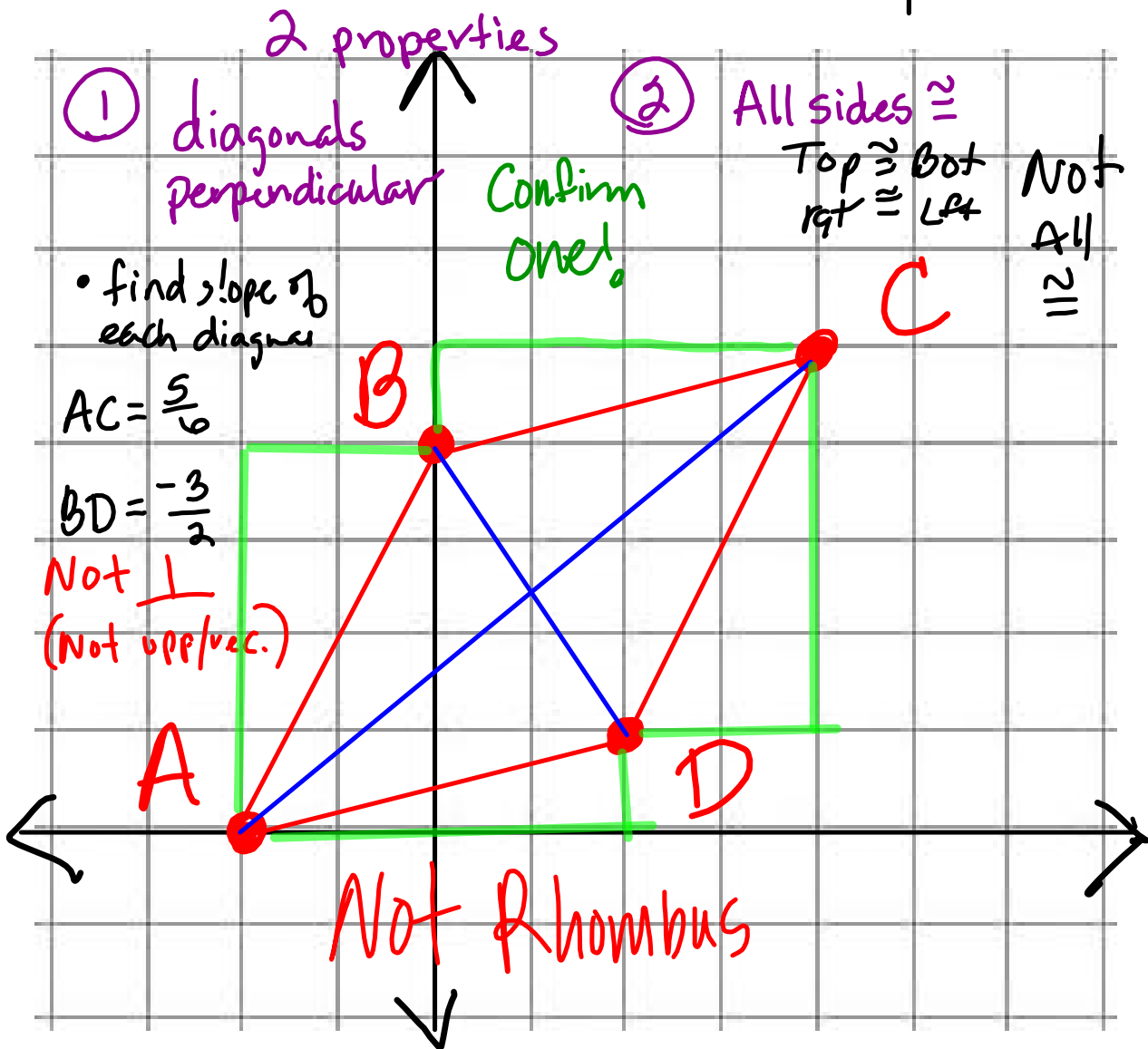


Ex 1) Is  $\triangle ABC$

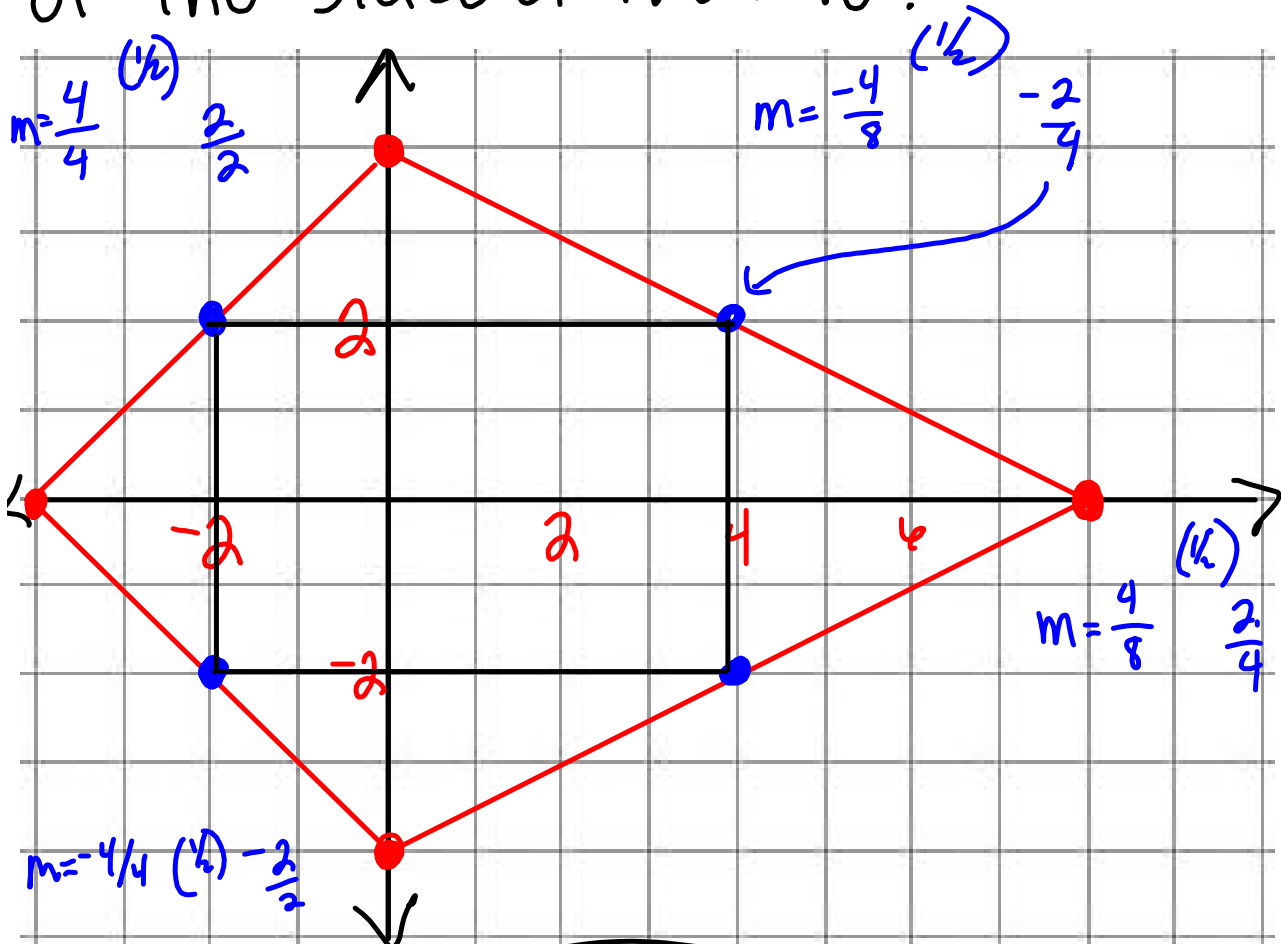
Scalene, Isosceles, Equilateral



Ex 2) IS parallelogram ABCD a rhombus? Explain



Ex 3 | A Kite is shown. What is the most precise classification of the quadrilateral formed by connecting the midpoints of the sides of the kite?



rectangle

Ex 4 | Is  $\overline{DE}$  the midsegment  
of  $\triangle ABC$ ? Connect to  
midpoints

