

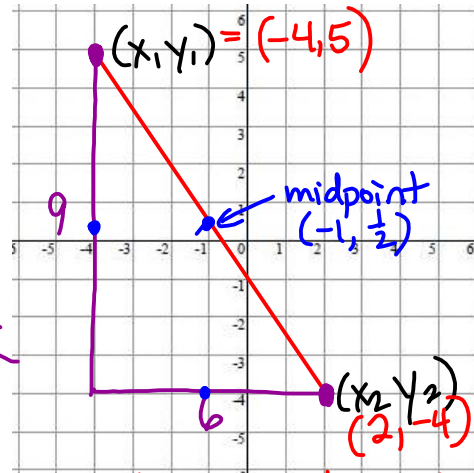
6.7 Polygons in the Coordinate Plane *EOC

recall

Slope formula:

$$\frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{-9}{6} = -\frac{3}{2}$$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-4 - 5}{2 - (-4)} = \frac{-9}{6} = -\frac{3}{2}$$



Parallel Slopes: SAME

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

Perpendicular slopes: opp sign, reciprocal (flip fraction)
 $\frac{1}{2} \perp -2$ their product is -1

Midpoint formula⁹

(average of 2 #'s)

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right) = \left(\frac{-4 + 2}{2}, \frac{5 + (-4)}{2} \right) = \left(-1, \frac{1}{2} \right)$$

Distance formula:

Use Pythagorean Theorem!

form a right triangle

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

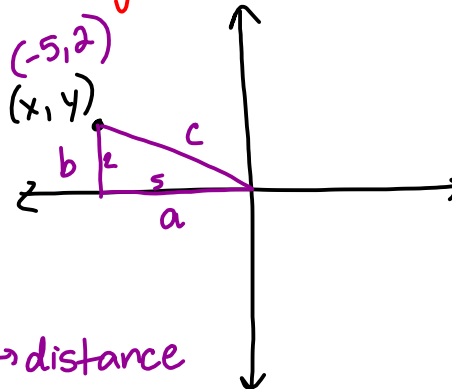
$$5^2 + 2^2 = c^2$$

$$25 + 4 = c^2$$

$$29 = c^2$$

$$\sqrt{29} = c$$

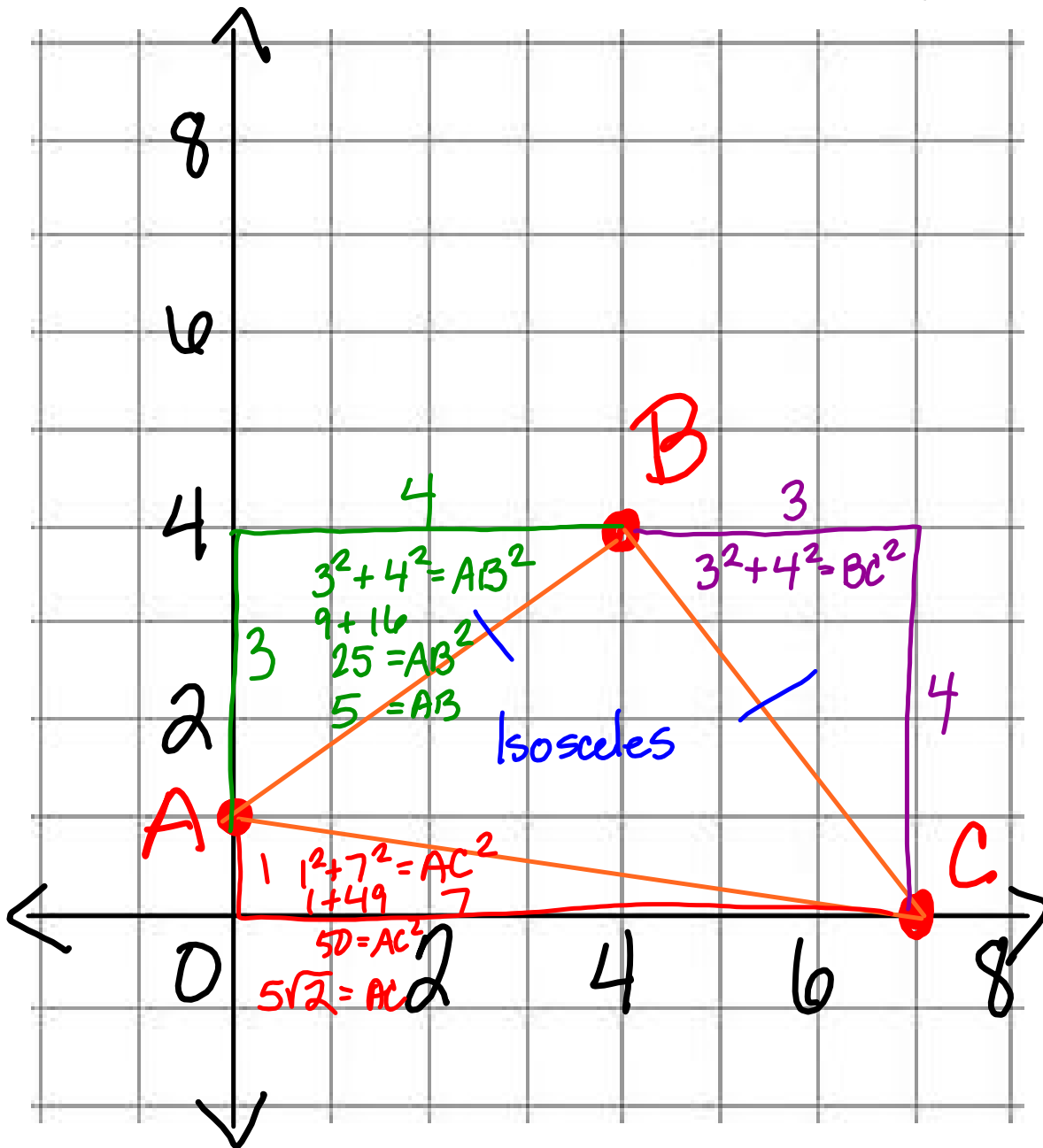
$$c = 5.38 \text{ units} \rightarrow \text{distance}$$



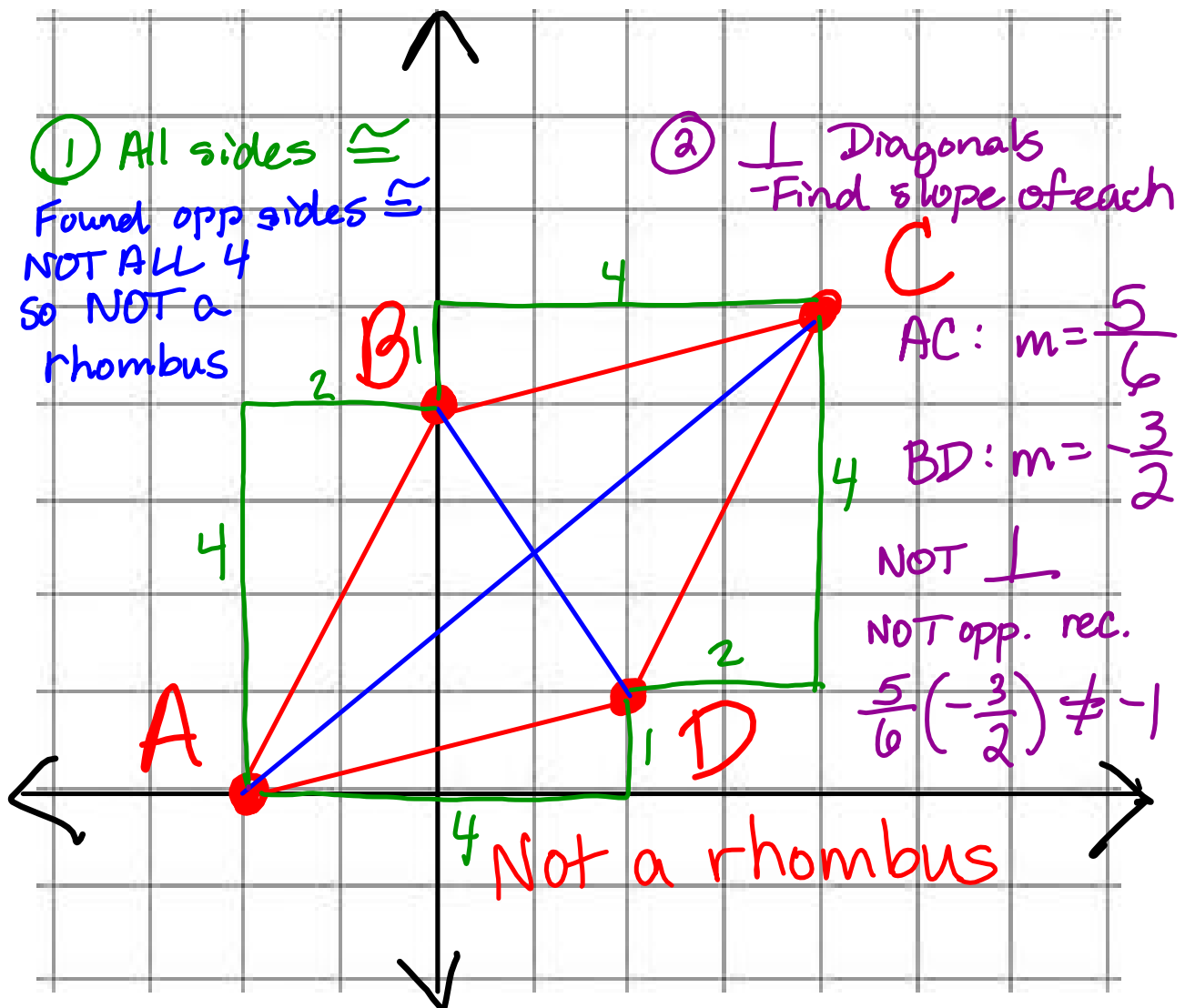
$$\left(d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \right)$$

Ex 1) Is $\triangle ABC$

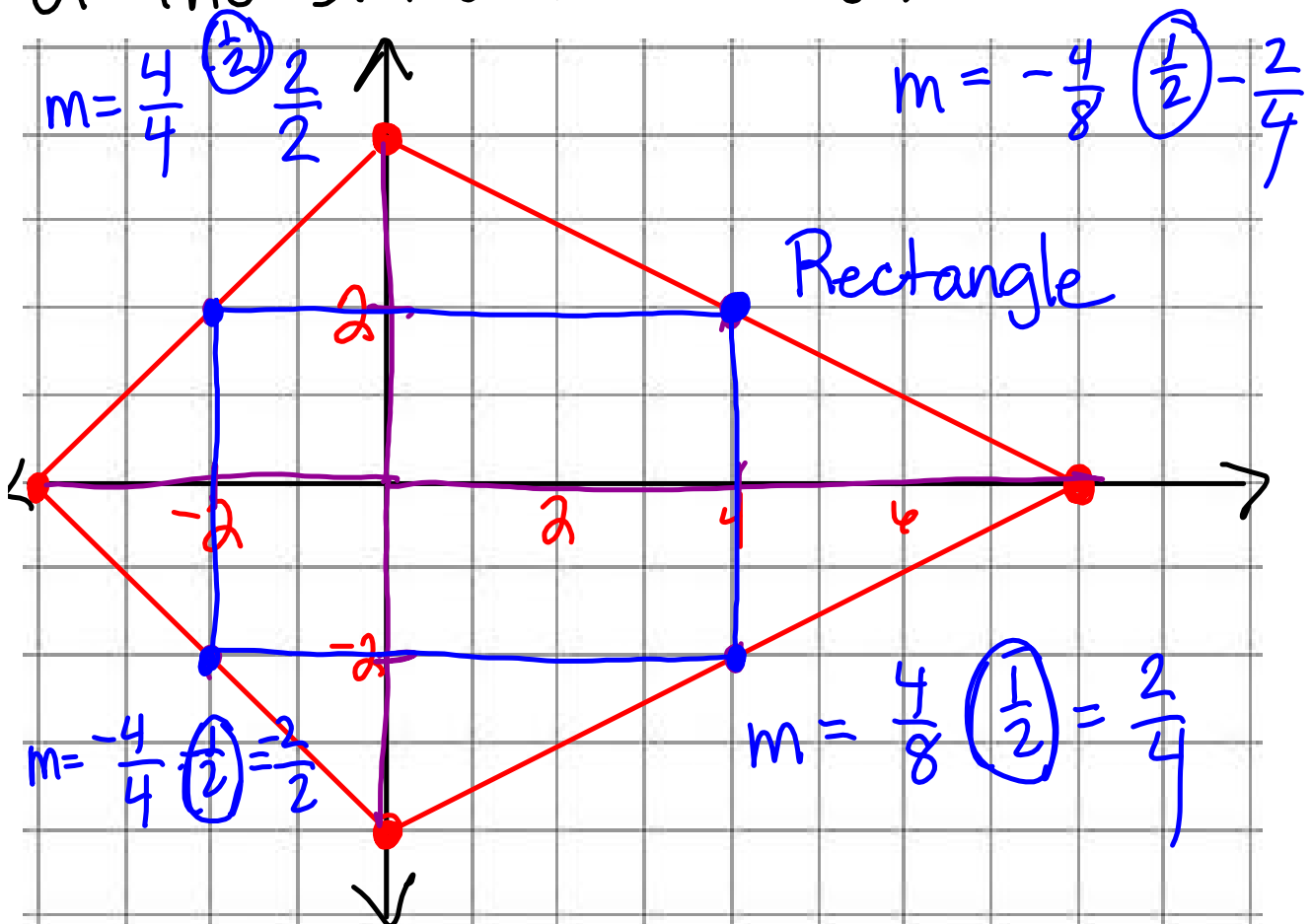
Scalene, Isosceles, Equilateral



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?



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

