

Good afternoon: warm up in notebooks

F is located at (2.3, 4.1) and G is located at (-8,-5). Find the exact length of  $\overline{FG}$ .  
(or, what is the distance between F and G)?

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

$$d = \sqrt{(-8 - 2.3)^2 + (-5 - 4.1)^2}$$

$$\sqrt{(-10.3)^2 + (-9.1)^2}$$

$$\sqrt{106.09 + 82.81}$$

$$\sqrt{188.9} \approx 13.74$$

Reminders:

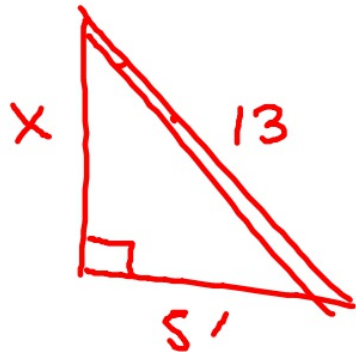
- \* next assessment is Tues 9/5
- \* can reassess EVERY grade in Powerschool! Don't wait!

Will need textbook  
today!!!!!!!!!!

Tornado drill?  
Head RIGHT  
out door, around  
past Keebler  
down stairs to auditorium  
use RIGHT entrance



A 13 foot ladder is propped up against a wall.  
The base of the ladder is 5 feet away from the base of the wall.  
How high up the wall does the top of the ladder reach?



$$x^2 + 5^2 = 13^2$$

$$\begin{array}{r} x^2 + 25 = 169 \\ - 25 \quad - 25 \\ \hline \end{array}$$

$$\sqrt{x^2} = \sqrt{144}$$

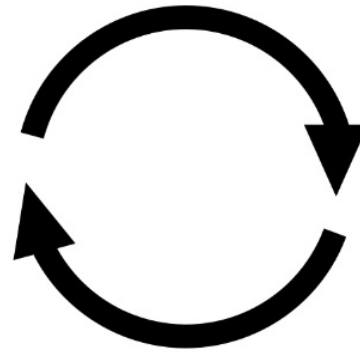
$$\underline{\underline{x = 12}}, \underline{\underline{-12}}$$

$$\begin{array}{l} x \\ 5^2 + 13^2 = c^2 \end{array}$$

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

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

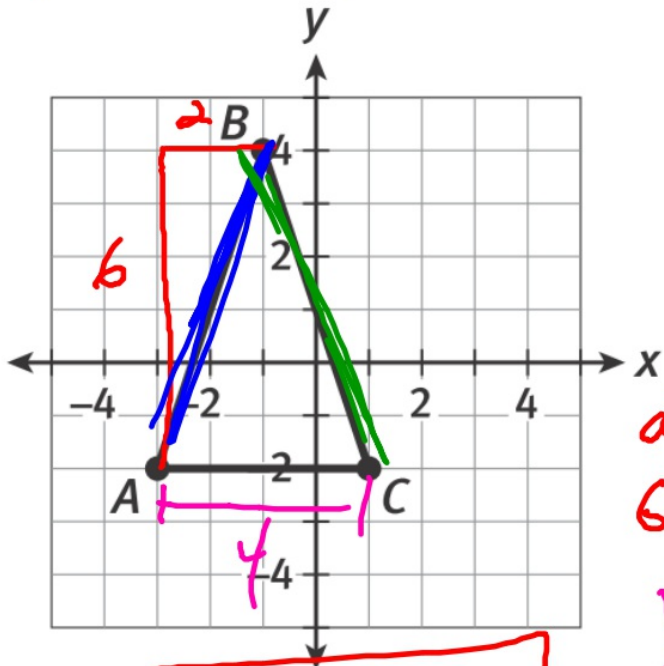
Distance Formula



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

Pythagorean  
Theorem

p. 59 #13 Ignore book instructions, instead: *round to hundredths.*

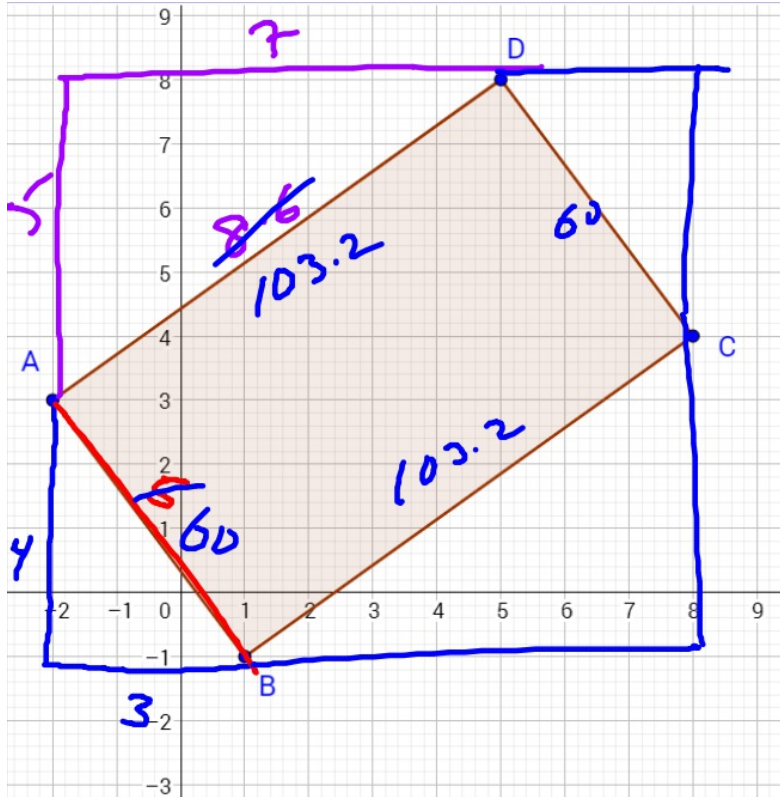


Find the length of AB using the Pythag. Thm  
 Find the length of BC using the Distance Formula  
 Find the length of AC however you want

Find the Perimeter of  $\triangle ABC$ .

$$\begin{aligned}
 & \left. \begin{aligned}
 a^2 + b^2 &= c^2 \\
 6^2 + 2^2 &= c^2 \\
 \sqrt{40} &= \sqrt{c^2} \\
 \underline{6.32} &= c
 \end{aligned} \right\} \begin{aligned}
 & B: (-1, 4) \quad C: (1, -2) \\
 & d = \sqrt{(1 - -1)^2 + (4 - -2)^2} \\
 & \sqrt{(2)^2 + (6)^2} \\
 & \sqrt{4 + 36} \\
 & \underline{6.32} \approx \sqrt{40}
 \end{aligned}
 \end{aligned}$$

$$\approx 16.64$$



Suppose ABCD represents a national park on a map with a scale of 1 unit = 12 miles

It costs the Park Service \$30 per mile hiked to survey the terrain and do a nature study.

Find the cost of surveying/studying the entire perimeter of the park.

\$9792



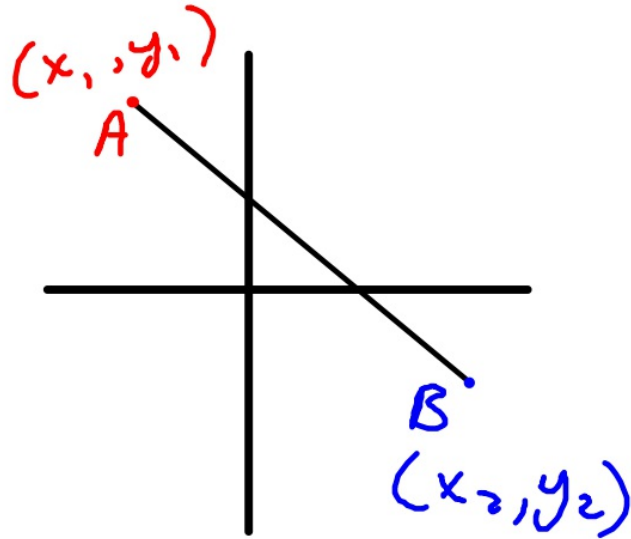
Finding the Midpoint in Euclidean Geometry

Finding the midpoint in Cartesian Geometry

How do you find the number in the middle of 2 other numbers?

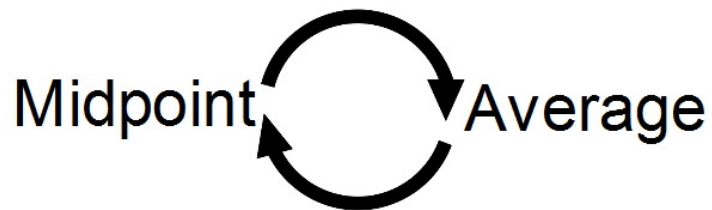


## Midpoint Formula



If A is located at  $(x_1, y_1)$  and B at  $(x_2, y_2)$ , then the location of the midpoint M, is

$$M = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

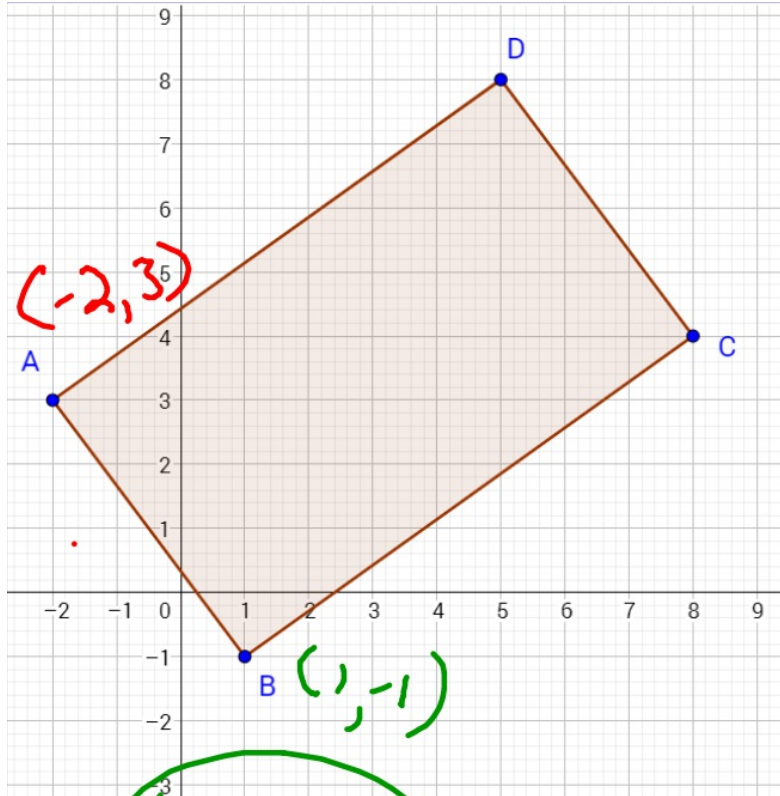


Need to know these (and how to use them!) for Tuesday's Assessment

Distance Between Two Points

Midpoint Between Two Points





$(-\frac{1}{2}, 1)$

Suppose a ranger station needs to be placed equidistant from 2 corners of the park, indicated by A and B.

Find one possible location for the station.  
~~How many miles is it from both A and B?~~

Share with your face partner something you have learned so far today.

What WILL be on Tuesday's assessment

- constructing a perpendicular bisector with compass/straightedge
- constructing angle bisector with compass/straightedge
- segment addition postulate and using algebra to find lengths (video +p 49 hw)
- finding distance using distance formula and/or Pythagorean Thm; Perimeter
- finding midpoint given coordinates
- angle relationships (review skill)

What will NOT be Tuesday's assessment (but will be on a later one!)

- topic we're about to cover

## Homework

- complete practice assessment and check detailed solutions at [mgeo.weebly.com](http://mgeo.weebly.com)
- look over review videos posted at [mgeo.weebly.com](http://mgeo.weebly.com) if needed
- assessment: Tuesday