

Today's Learning Goal(s):

By the end of the class, I will be able to:

- a) Find the midpoint of any line segment.

MPM 2DI

Unit 2: Analytic Geometry

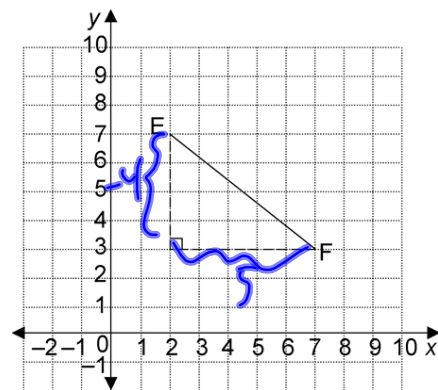
Date: Feb. 23/16

Warm-up: Read p. 52 and the top of p. 56

Coordinate geometry or **analytic geometry** is a branch of mathematics in which algebra is applied to geometric points, lines and figures, all of which the positions are defined by coordinates.

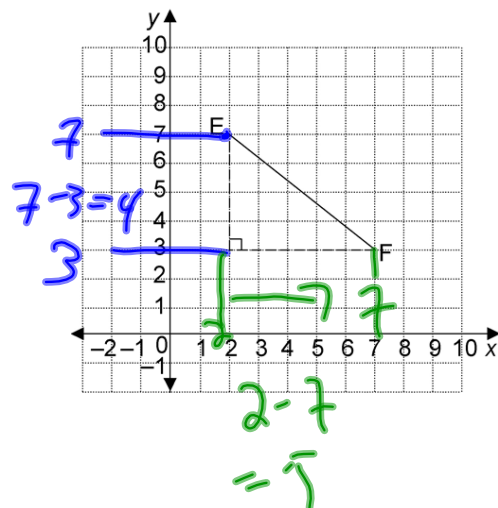
Review: Using **only** $m = \frac{\text{rise}}{\text{run}}$, and counting blocks, find the slope of line segment EF.

$$= -\frac{4}{5}$$

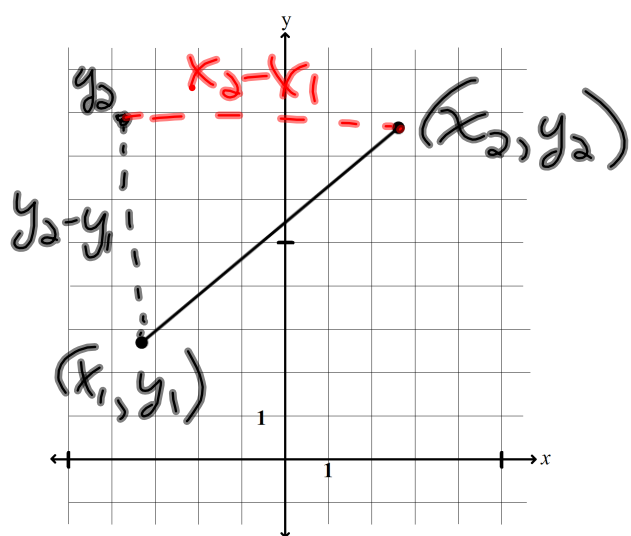


Review: Use another method to find the slope of line segment EF.

$$\begin{aligned} m &= \frac{\Delta y}{\Delta x} \\ &= \frac{7-3}{2-7} \\ &= \frac{4}{-5} \end{aligned}$$



Review: For any two points (x_1, y_1) and (x_2, y_2) on a line, find the slope.



$$\text{Slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

2.1 The Midpoint of a Line Segment (Day 1)

Review: Find the average of the following two numbers: 70, 80

$$\begin{aligned} \text{Average} &= \frac{70+80}{2} \\ &= 75 \end{aligned}$$

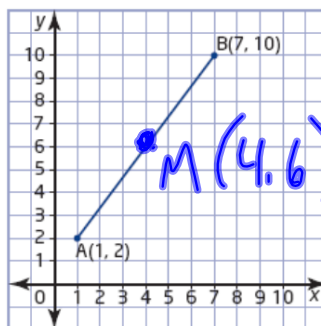
~~$$\frac{70+80}{2}$$~~

NEW!

The **midpoint** of a line segment is a point that divides a line segment into two equal line segments.
Note: There is no such thing as a midpoint of a *line*.

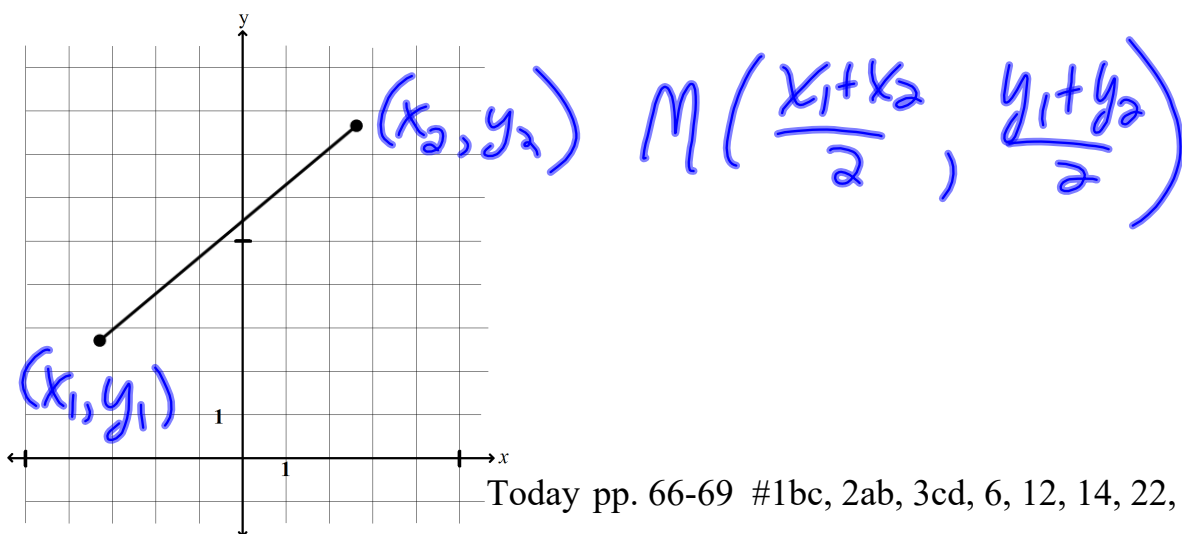
Ex. 1 Find the midpoint of line segment AB.

$$\begin{aligned} M &\left(\frac{1+7}{2}, \frac{2+10}{2} \right) \\ &= M(4, 6) \end{aligned}$$



NEW!

For any two points (x_1, y_1) and (x_2, y_2) on a line, the midpoint of these points is the point



Today pp. 66-69 #1bc, 2ab, 3cd, 6, 12, 14, 22, 28, 29