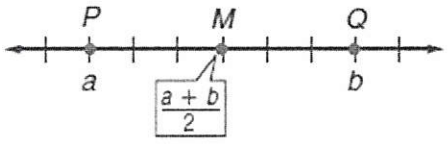
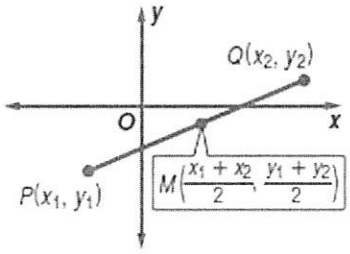
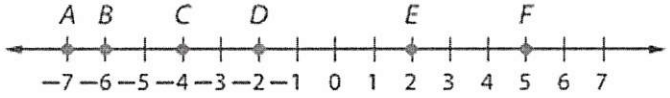
Midpoint Classwork

KEY

Definition of Midpoint	The midpoint between two points is their "average" x and y values. That would make sense, because the average is right in the middle! it does.
Midpoint Formulas	1. On a number line $\frac{a+b}{2}$  2. On a coordinate plane $\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$ 

Ex #1: Use the number line below to find the middle, or "average" of each measure.



a) *AD* b) *BE* c) *FA*

$-4\frac{1}{2}$ or -4.5 or $\frac{-9}{2}$ -2 -1

Ex #2: Find the coordinates of the midpoint of a segment having the given endpoints.

a) *J*(-1, 2), *K*(6, 1)

$\left(\frac{-1+6}{2}, \frac{2+1}{2}\right)$

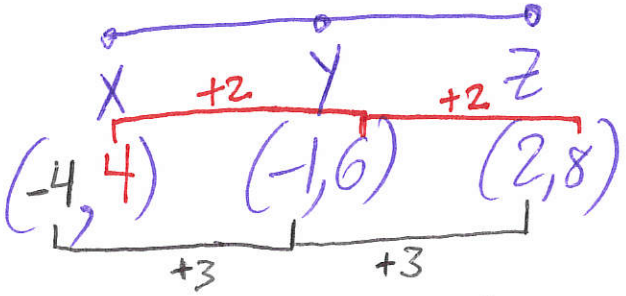
$\left(\frac{5}{2}, \frac{3}{2}\right)$

b) *A*(5, 12), *B*(-4, 8)

$\left(\frac{5+-4}{2}, \frac{12+8}{2}\right)$

$\left(\frac{1}{2}, 10\right)$

Ex #3: Find the coordinates of *X* if *Y*(-1, 6) is the midpoint of $\overline{XZ}$ and *Z* has coordinates (2, 8).



X: (-4, 4)