

**Main Ideas/  
Questions**

Midpoint  
Characteristics

**Notes**

**Midpoint** – The point \_\_\_\_\_ between two points.

1<sup>st</sup> point  $(x_1, y_1)$

2<sup>nd</sup> point  $(x_2, y_2)$

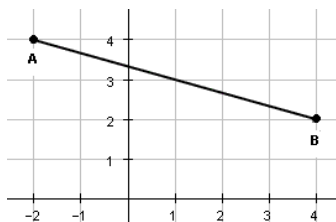
**FORMULA:**

Examples

1. Find the midpoint between  $(0, 4)$  and  $(-6, 2)$ .

2. Find the midpoint between  $(-3, -5)$  and  $(-2, -8)$ .

3. Find the midpoint.



4. Find the other endpoint of the segment AB if  $A(3, 5)$  and the midpoint is  $(8, 0)$ .

5. If one endpoint is  $(-8, 3)$  and the midpoint is  $(0, 3)$ , what is the other endpoint?

6. Endpoint:  $D(-3, -5)$  and Midpoint:  $M(-\frac{3}{2}, 6)$ . Where is the other endpoint?

**Main Ideas/  
Questions**

Partitioning  
Characteristics

**Notes**

**Partitioning** – Calculating a point somewhere in between two points that \_\_\_\_\_ a line segment into a proportion.

1<sup>st</sup> point  $(x_1, y_1)$

2<sup>nd</sup> point  $(x_2, y_2)$

**FORMULA:**

Examples

1. Given the points A(3, 4) and B(8, 10), find the coordinate of point P on the segment AB that partitions AB in the ratio 1:2.
2. Given the points A(3, 4) and B(8, 10), find the coordinate of point P on the segment BA that partitions BA in the ratio 1:2.
3. Given the points A(-3, 5) and B(-8, 7), find the coordinate of point P on the segment AB so that P is  $\frac{4}{5}$  away from A.
4. Given the line segment BA with A(-1, 0) and B(-2, 4), partition the line segment using  $\frac{1}{3}$ .
5. The map shows a straight highway between two towns. A highway planner wants to put three new rest stops between the towns so that it divides the highway into 3 equal parts. Find the coordinates of the rest stops.

