

*P.I. G.G.66: Find the midpoint of a line segment, given its endpoints*

1. Find the midpoint of  $(3, -2)$  and  $(-11, 12)$ .

[A]  $(-8, 10)$                       [B]  $(7, 7)$   
[C]  $(-4, 5)$                       [D]  $(14, 14)$

2. What is the midpoint of line segment with endpoints  $(5, 6)$  and  $(-2, -6)$ ?

[A]  $(1.5, 6)$       [B]  $(1.5, 0)$       [C]  $(3.5, 0)$   
[D]  $(1.5, -6)$                       [E]  $(3.5, 6)$

3. Find the coordinates of the midpoint of the segment connecting  $H(3, -2)$  and  $K(-15, 16)$ .

[A]  $(-12, 14)$                       [B]  $(9, 9)$   
[C]  $(18, 18)$                       [D]  $(-6, 7)$

4. Find the midpoint of  $(-2, -1)$  and  $(-16, 13)$ .

5. Find the coordinates of the midpoint of  $\overline{MN}$  with endpoints  $M = (2, 3)$  and  $N = (2, 9)$ .

6. Write the coordinates of two points  $A$  and  $B$  such that the midpoint of  $\overline{AB}$  is  $(-3, -8)$ .

7. Give two sets of possible coordinates of endpoints of segments with  $M(2, 4)$  as the midpoint.

8. Compare the quantities in Column A and Column B.

Column A

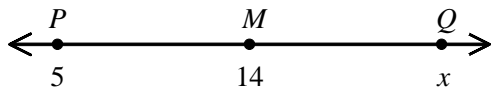
the  $y$ -coordinate of the midpoint  
of the segment between the  
points  $(1, 4)$  and  $(-2, -5)$

Column B

the  $x$ -coordinate of the midpoint  
of the segment between the  
points  $(-1, -4)$  and  $(2, 5)$

- [A] The quantity in Column A is greater.      [B] The quantity in Column B is greater.  
[C] The quantities are equal.      [D] The relationship cannot be determined from the information given.

9. If  $M$  is the midpoint of  $\overline{PQ}$ , find the value of  $x$ .      [A] 24      [B] 22      [C] 25      [D] 23



10. Find the coordinates of  $B$  if  $A$  is the point  $(-1, 4)$  and the midpoint of  $\overline{AB}$  is  $M = (5, 4)$ .

[1] C

[2] B

[3] D

[4]  $(-9, 6)$

[5]  $(2, 6)$

Answers may vary. Sample:  $A(-4, -8)$ ,  $B$

[6]  $(-2, -8)$

[7] Answers may vary. Sample:  $(5, 6)$  and  $(-1, 2)$

[8] B

[9] D

[10]  $(11, 4)$