

NAME: _____

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

1. 080910ge, P.I. G.G.66

The endpoints of \overline{CD} are $C(-2,-4)$ and $D(6,2)$. What are the coordinates of the midpoint of \overline{CD} ?

- [A] (4,3) [B] (4,-2)
[C] (2,3) [D] (2,-1)

2. fall0813ge, P.I. G.G.66

Line segment AB has endpoints $A(2,-3)$ and $B(-4,6)$. What are the coordinates of the midpoint of \overline{AB} ?

- [A] $(-1, 1\frac{1}{2})$ [B] $(3, 4\frac{1}{2})$
[C] $(-1, 3)$ [D] $(-2, 3)$

3. 060822a, P.I. G.G.66

What is the midpoint of the line segment that joins points $(4,-2)$ and $(-2,5)$?

- [A] $(1, \frac{3}{2})$ [B] $(2, \frac{3}{2})$
[C] $(\frac{3}{2}, 3)$ [D] $(1, \frac{7}{2})$

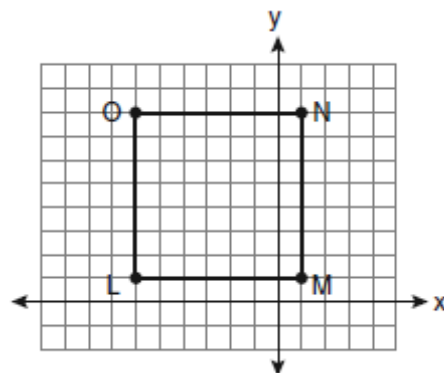
4. 080624a, P.I. G.G.66

The coordinates of A are $(-9, 2)$ and the coordinates of G are $(3, 14)$. What are the coordinates of the midpoint of \overline{AG} ?

- [A] $(-6, 16)$ [B] $(-21, -10)$
[C] $(-3, 8)$ [D] $(-6, 6)$

5. 060919ge, P.I. G.G.66

Square $LMNO$ is shown in the diagram below.



What are the coordinates of the midpoint of diagonal \overline{LN} ?

- [A] $(-3\frac{1}{2}, 3\frac{1}{2})$ [B] $(-2\frac{1}{2}, 3\frac{1}{2})$
[C] $(4\frac{1}{2}, -2\frac{1}{2})$ [D] $(-2\frac{1}{2}, 4\frac{1}{2})$

6. 080217a, P.I. G.G.66

M is the midpoint of \overline{AB} . If the coordinates of A are $(-1, 5)$ and the coordinates of M are $(3, 3)$, what are the coordinates of B ?

- [A] $(2, 8)$ [B] $(7, 1)$
[C] $(-5, 7)$ [D] $(1, 4)$

7. 010914a, P.I. G.G.66

The midpoint of \overline{AB} has coordinates of $(5, -1)$. If the coordinates of A are $(2, -3)$, what are the coordinates of B ?

- [A] $(3.5, -2)$ [B] $(8, -5)$
[C] $(7, 0)$ [D] $(8, 1)$

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8. 010718a, P.I. G.G.66

The midpoint of \overline{AB} is $(-1,5)$ and the coordinates of point A are $(-3,2)$. What are the coordinates of point B ?

- [A] $(1,8)$ [B] $(0,7)$
[C] $(1,10)$ [D] $(-5,8)$

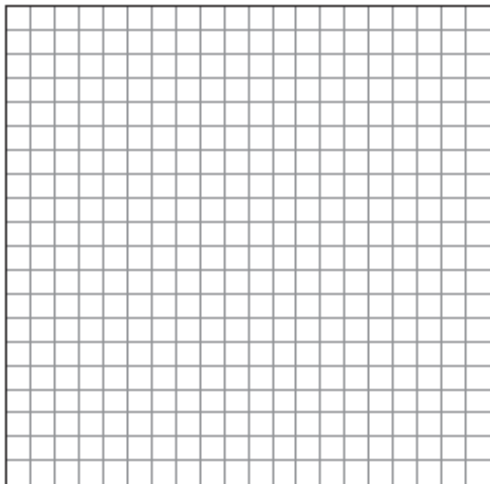
9. 080515a, P.I. G.G.66

A line segment on the coordinate plane has endpoints $(2,4)$ and $(4,y)$. The midpoint of the segment is point $(3,7)$. What is the value of y ?

- [A] 10 [B] 5 [C] 11 [D] -2

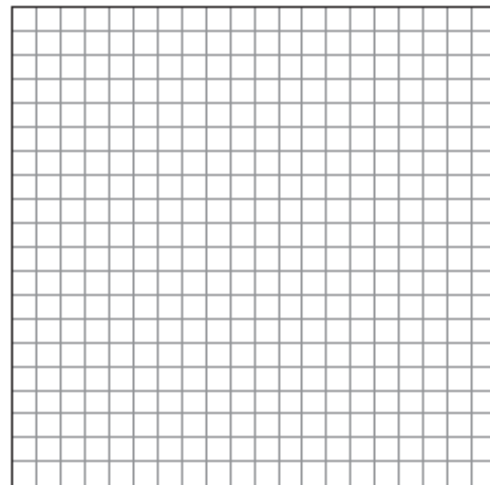
10. 060434a, P.I. G.G.66

The coordinates of the midpoint of \overline{AB} are $(2,4)$, and the coordinates of point B are $(3,7)$. What are the coordinates of point A ? [The use of the grid is optional.]



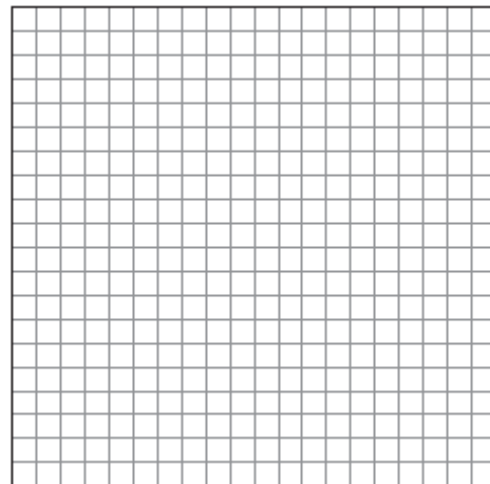
11. 080834a, P.I. G.G.66

One endpoint of a line segment is $(6,2)$. The midpoint of the segment is $(2,0)$. Find the coordinates of the other endpoint. [The use of the grid is optional.]



12. 010021a, P.I. G.G.66

The midpoint M of line segment AB has coordinates $(-3,4)$. If point A is the origin, $(0,0)$, what are the coordinates of point B ? [The use of the grid is optional.]



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[1] D

[2] A

[3] A

[4] C

[5] D

[6] B

[7] D

[8] A

[9] A

[2] (1,1), and appropriate work is shown, such as a correct graph of \overline{AB} and an appropriate explanation of how point A is found or the use of the midpoint formula.

[1] Appropriate work is shown, but one computational or graphing error is made.

or [1] Appropriate work is shown, but one conceptual error is made, such as finding the midpoint of the given coordinates.

or [1] The midpoint and points A and B are graphed correctly, but the coordinates of point A are not stated or are stated incorrectly.

or [1] (1,1), but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[10] incorrect procedure.

[2] (-2,-2), and appropriate work is shown, such as the use of the midpoint formula, a correct graph of the line segment showing the slope, or an appropriate explanation of how the missing endpoint is found.

[1] Appropriate work is shown, but one computational or graphing error is made.

or [1] Appropriate work is shown, but one conceptual error is made, such as finding (4,1), the midpoint of the given points.

or [1] A correct graph of the line segment is drawn, but the coordinates are not stated.

or [1] (-2,-2), but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[11] incorrect procedure.

[2] (-6,8) or -6,8 or $x = -6$ and $y = 8$ and an appropriate explanation is given, such as graphing the line or doubling the coordinates.

[1] One correct coordinate and one incorrect coordinate are found.

or [1] An appropriate method is shown, such as algebraic or graphing, but computational mistakes are made.

or [1] (-6,8) or -6,8 or $x = -6$ and $y = 8$ and no explanation is given.

or [1] Substitutions are correct for the midpoint formula, but computational mistakes are made.

or [1] The student properly locates point B on the graph but does not state its coordinates.

or [1] Point A and point M are reversed, resulting in B(3,-4), and an explanation is given.

[0] Only the midpoint of \overline{AM} $(-\frac{3}{2}, 2)$ is found.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[12] incorrect procedure.