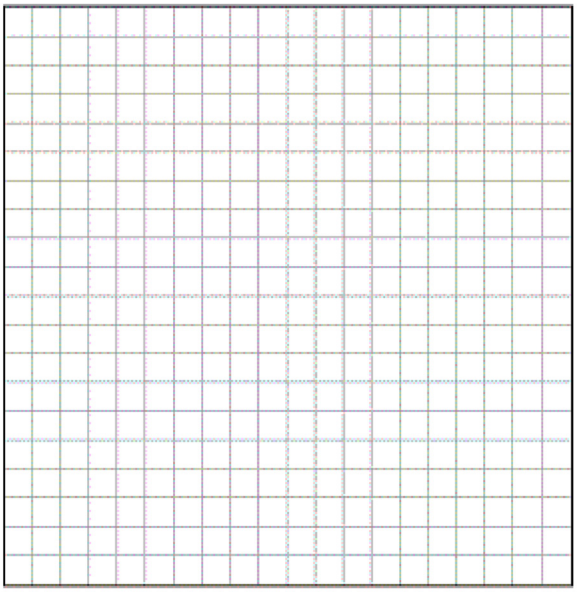
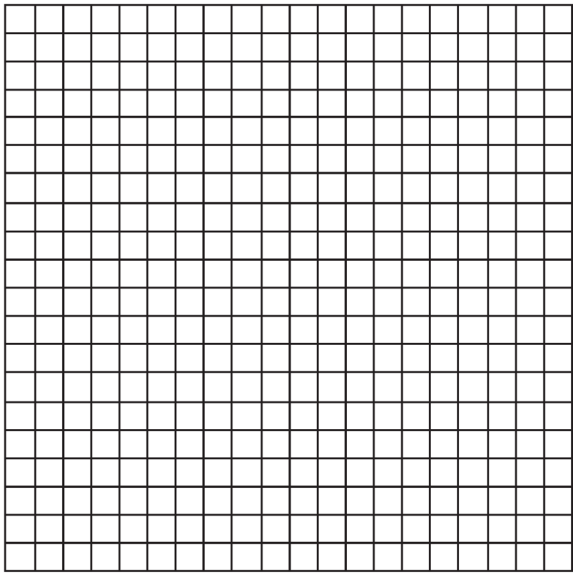
G.G.66: Midpoint 3: Find the midpoint of a line segment, given its endpoints

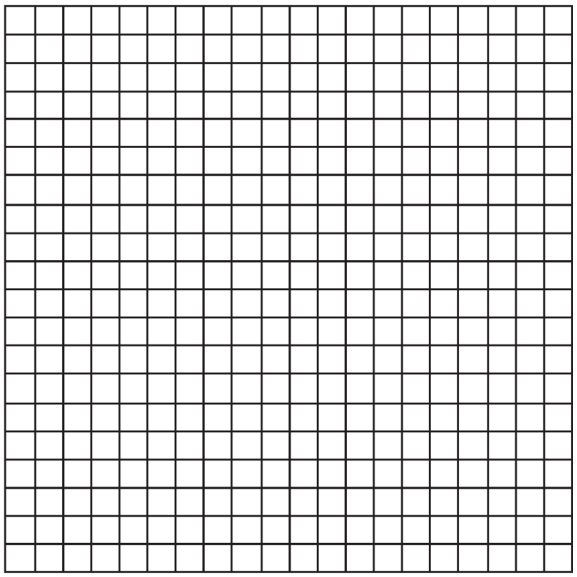
1 The midpoint M of line segment AB has coordinates $(-3,4)$. If point A is the origin, $(0,0)$, what are the coordinates of point B? [The use of the accompanying grid is optional.]



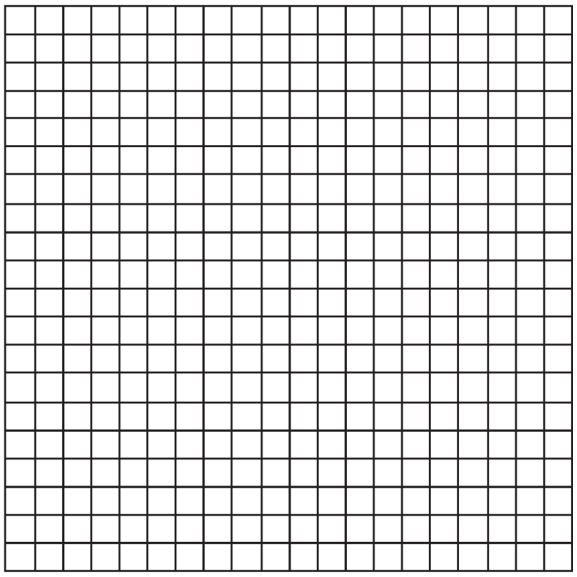
2 The coordinates of the midpoint of $\overline{AB}$ are $(2,4)$, and the coordinates of point B are $(3,7)$. What are the coordinates of point A? [The use of the accompanying grid is optional.]



3 In a circle whose center is $(2,3)$, one endpoint of a diameter is $(-1,5)$. Find the coordinates of the other endpoint of that diameter. [The use of the accompanying grid is optional.]

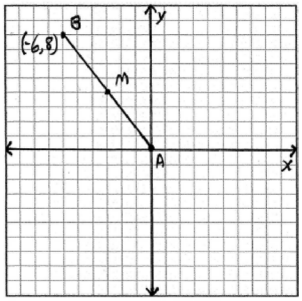


4 One endpoint of a line segment is $(6,2)$. The midpoint of the segment is $(2,0)$. Find the coordinates of the other endpoint. [The use of the grid is optional.]



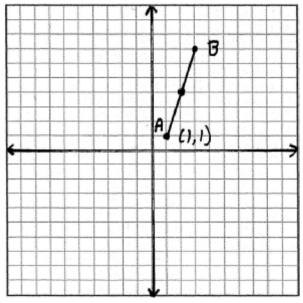
G.G.66: Midpoint 3: Find the midpoint of a line segment, given its endpoints
Answer Section

1 ANS:

(−6, 8). 

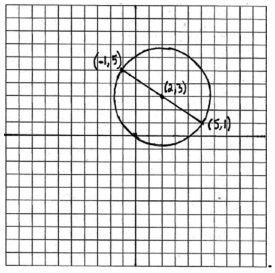
REF: 010021a

2 ANS:

(1, 1). 

REF: 060434a

3 ANS:

(5, 1). 

$C_x = \dfrac{A_x + B_x}{2}$. $C_y = \dfrac{A_y + B_y}{2}$.

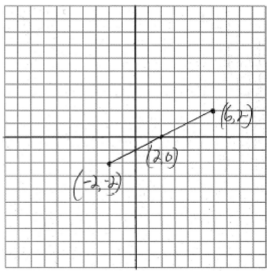
$2 = \dfrac{-1 + R_x}{2}$ $\quad 3 = \dfrac{5 + R_y}{2}$

$4 = -1 + R_x$ $\quad 6 = 5 + R_y$

$5 = R_x$ $\quad 1 = R_y$

REF: 010633a

4 ANS:



(–2, –2).

REF: 080834a