

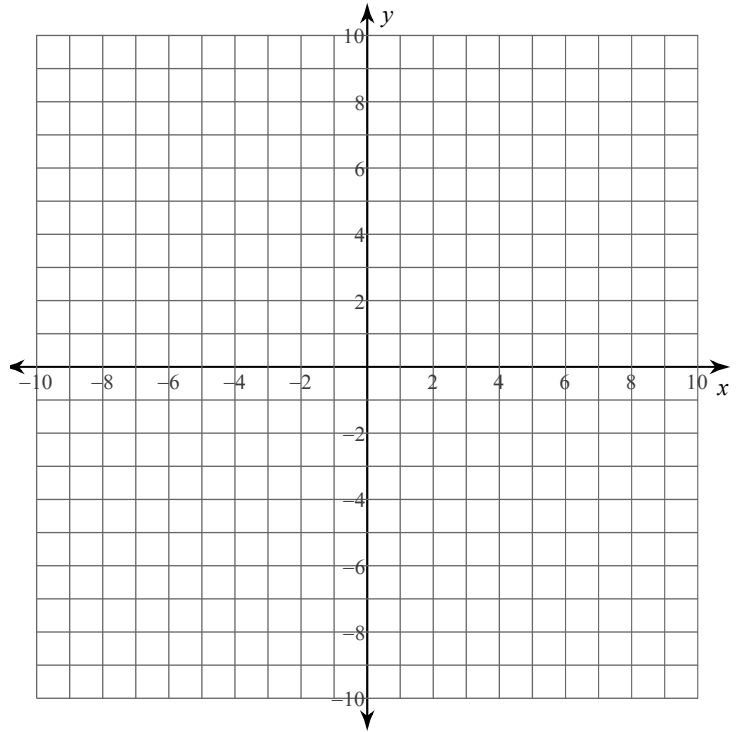
**1c-2 Homework:** Distance, midpoints, & analytic geometry

**1.** Given the points  $A(-3, 5)$  and  $B(4, 5)$ .

a. Plot and label the points and line segment

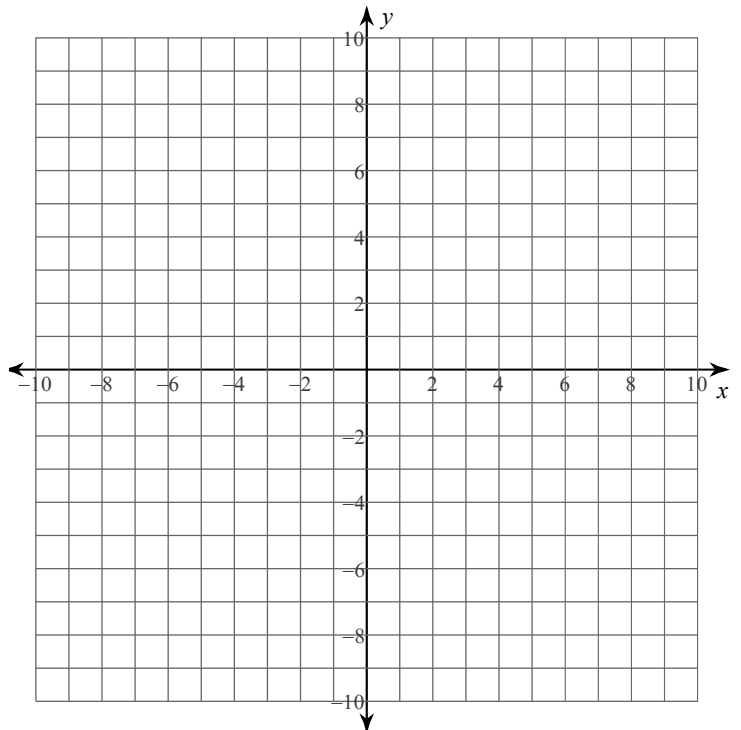
$\overline{AB}$  on the graph.

b. What is the length  $AB$ . Show your calculation or explain how you determined the result.



**2a.** Plot and label line segment  $\overline{AB}$  and its endpoints  $A(2, 4)$  and  $B(-8, 6)$ .

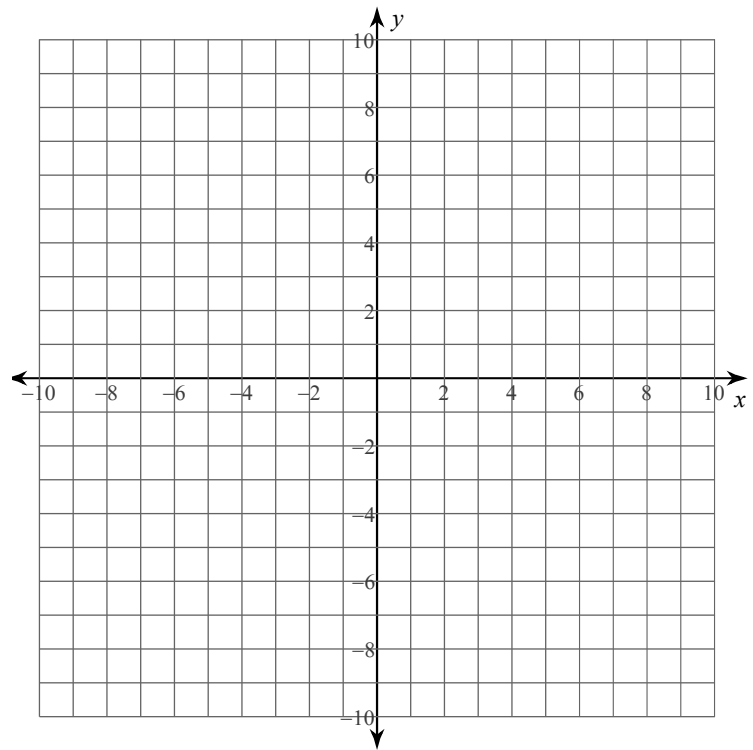
b. What are the coordinates of the midpoint of  $\overline{AB}$ ?



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**3a.** Plot the points  $P(-5, 1)$  and  $Q(3, 7)$ .

b. Find the length  $PQ$ . Show your calculations.

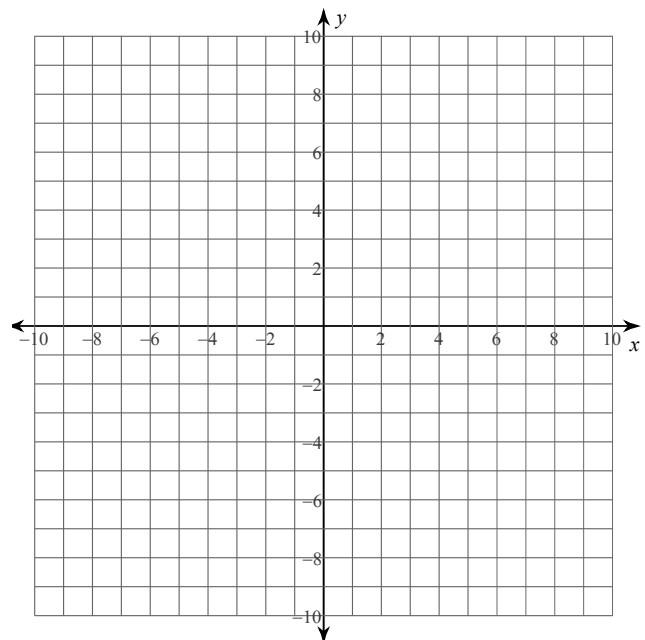


**4.** What are the coordinates of the midpoint  $M$  of a line segment with end points  $A$  and  $B$ ?

Plot the three points and the segment  $\overline{AB}$ . Write your answer as an ordered pair. Show your work.

$$A = (-5, -8)$$

$$B = (-1, 6)$$

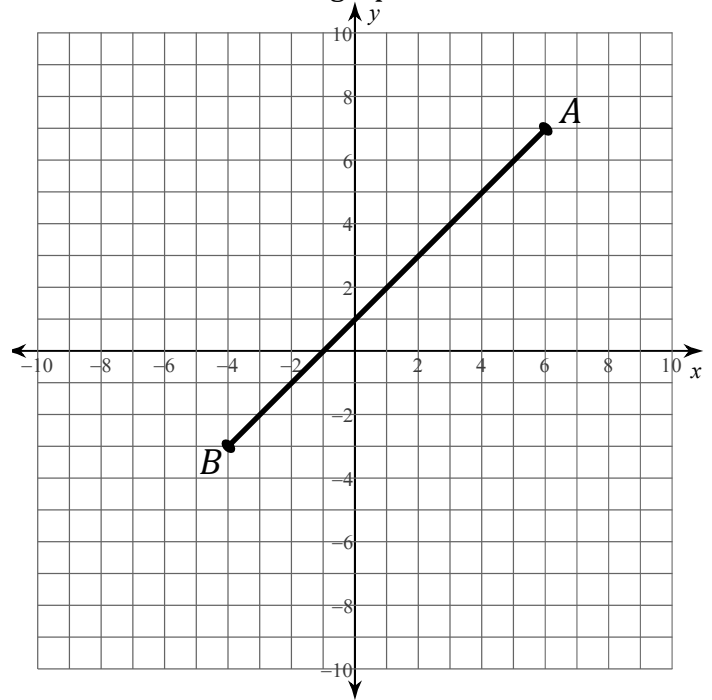


**5. Midpoint:** Given the segment and endpoints  $A$  and  $B$  as shown in the graph.

a. Write each endpoint as an ordered pair

$A =$

$B =$



b. Calculate the coordinates of the midpoint of  $\overline{AB}$ ,  $M$ . Show your work and write your answer as an ordered pair. Label the midpoint on the graph.

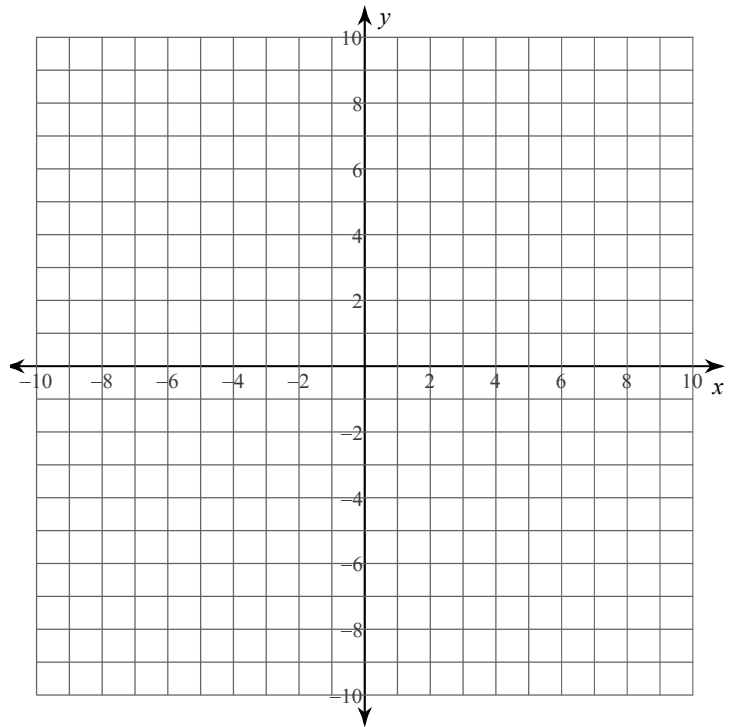
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6. On the graph, show the line segment with end points  $A$  and  $B$ .

$$A = (-2, 1)$$

$$B = (10, 6)$$

- b. Calculate the length  $AB$ . Round your answer to the *nearest tenth*.



- c. Calculate the coordinates of the midpoint  $M$  of the line segment. Write the midpoint  $M$  as an ordered pair and mark it accurately on the graph.

**Regents questions**

7.

**32** Determine and state the length of a line segment whose endpoints are  $(6,4)$  and  $(-9,-4)$ .