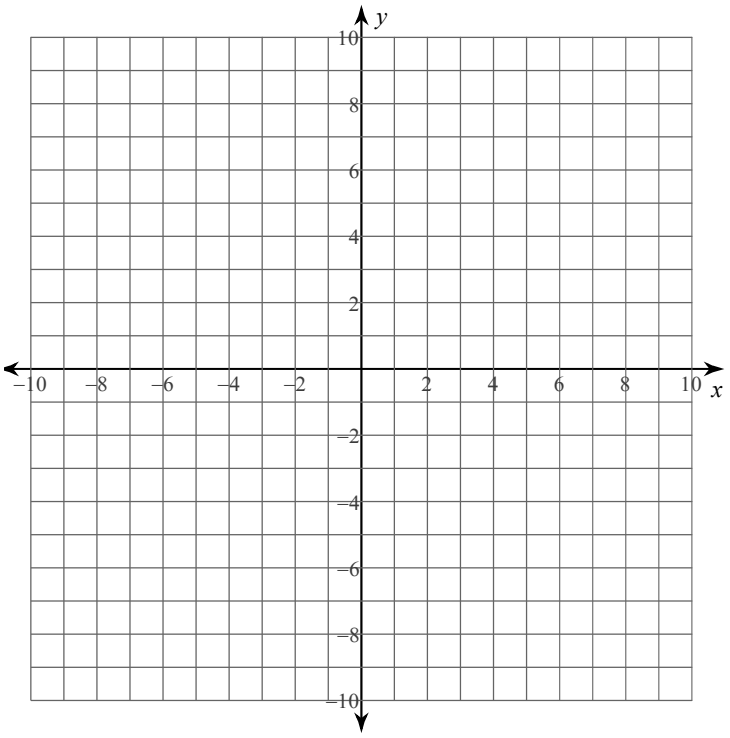
BECA / Dr. Huson / 11.2 Geometry Name:
November 29, 2016

Exam: Distance, midpoints, & analytic geometry

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

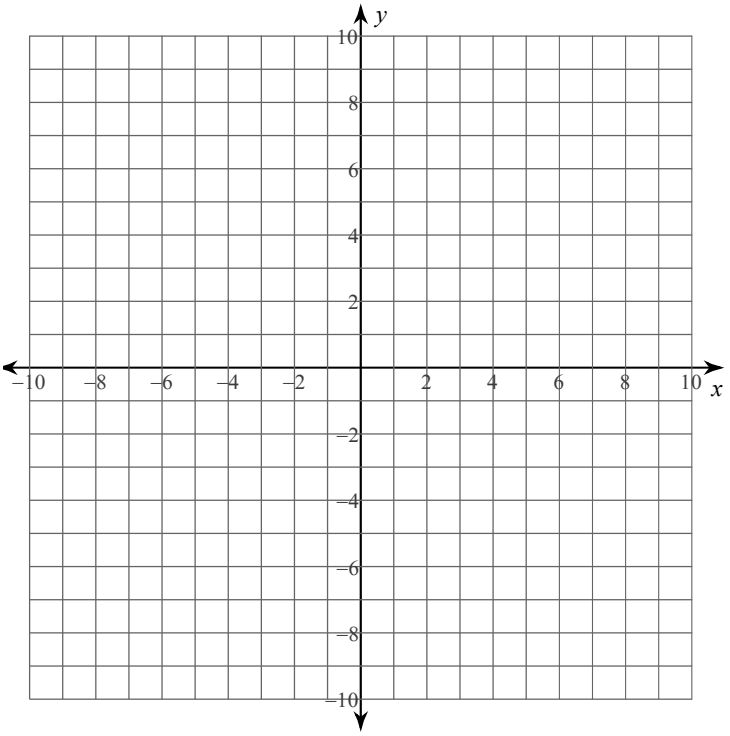
a. Plot and label the points and line segment $\overline{AB}$ on the graph.

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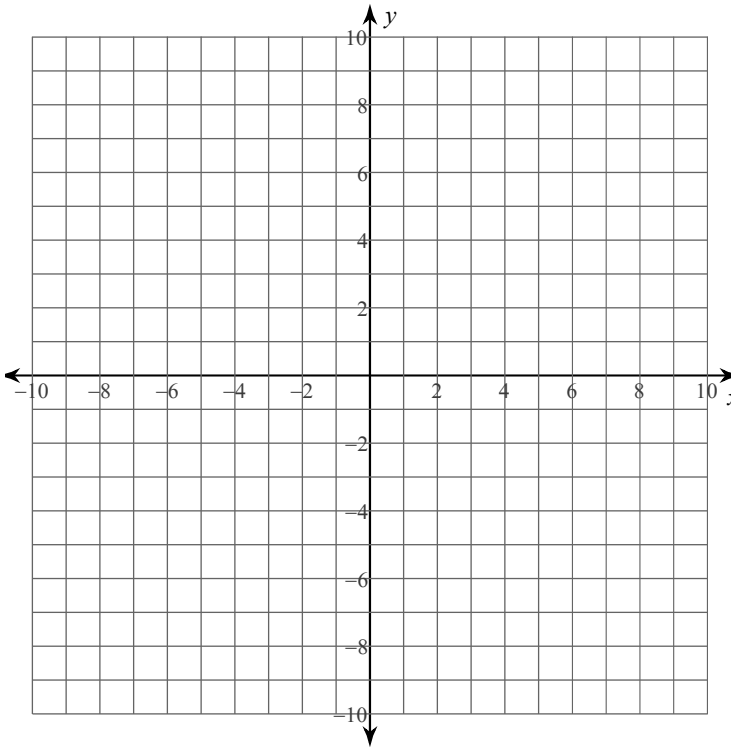
3a. Plot the points $P(-5, 1)$ and $Q(3, 7)$.

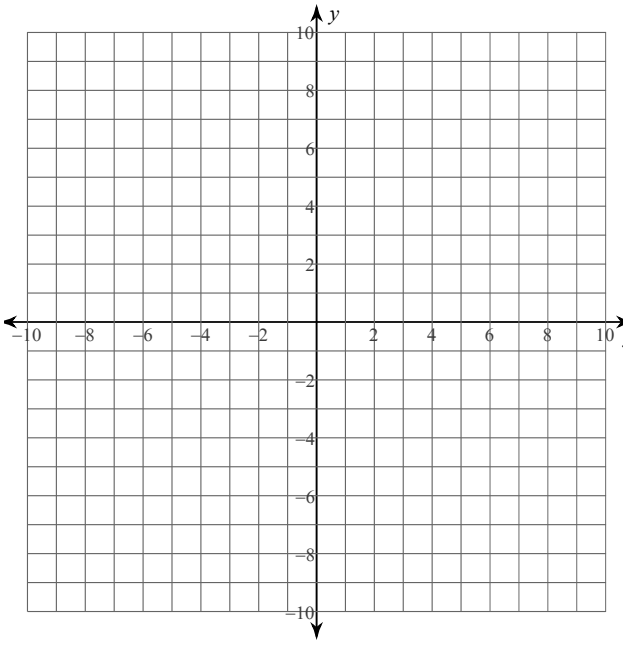
b. Find the length PQ. Show your calculations.



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.

$A = (-5, -8)$

$B = (-1, 6)$



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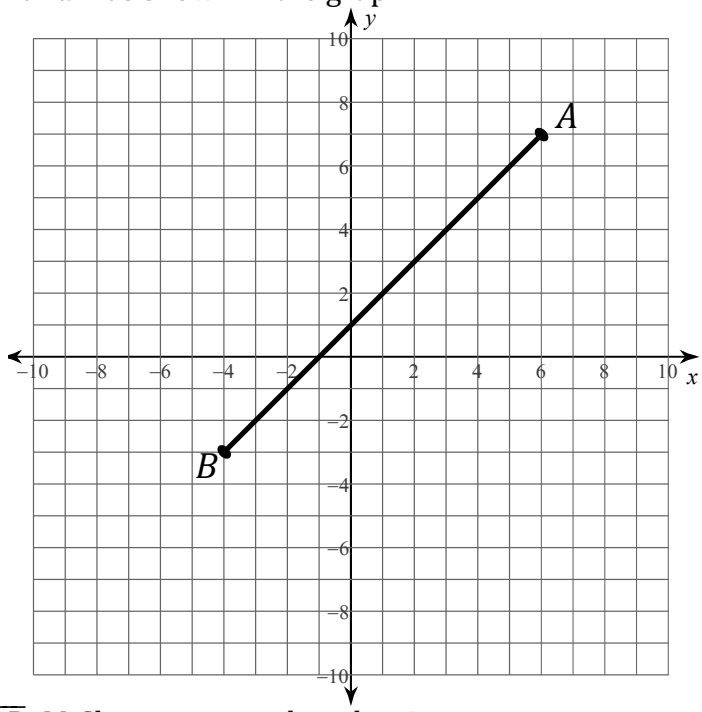
5. Midpoint: Given the segment and endpoints A and B as shown in the graph.

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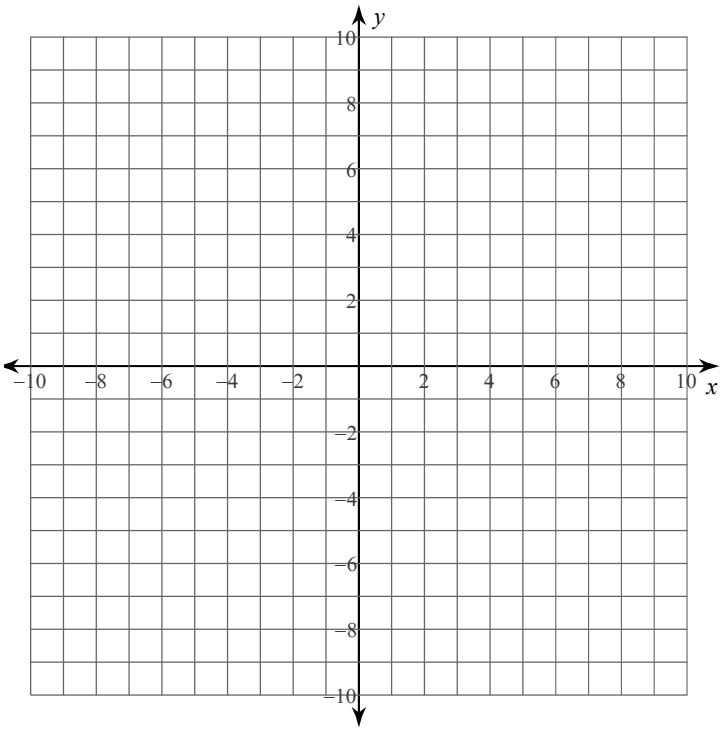
6. On the graph, show the line segment with end points *A* and *B*.

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.

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Regents questions
7.

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

8.

Which equation represents a line that is perpendicular to the line represented by $2x - y = 7$?

(1) $y = -\frac{1}{2}x + 6$

(2) $y = \frac{1}{2}x + 6$

(3) $y = -2x + 6$

(4) $y = 2x + 6$

9.

The graphs of the lines represented by the equations $y = \frac{1}{3}x + 7$ and $y = -\frac{1}{3}x - 2$ are

(1) parallel

(2) horizontal

(3) perpendicular

(4) intersecting, but not perpendicular

10.

Which equation represents a line that passes through the point $(-2,6)$ and is parallel to the line whose equation is $3x - 4y = 6$?

(1) $3x + 4y = 18$

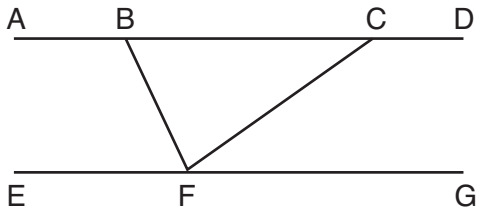
(2) $4x + 3y = 10$

(3) $-3x + 4y = 30$

(4) $-4x + 3y = 26$

11.

Steve drew line segments *ABCD*, *EFG*, *BF*, and *CF* as shown in the diagram below. Scalene $\triangle BFC$ is formed.



Which statement will allow Steve to prove $\overline{ABCD} \parallel \overline{EFG}$?

(1) $\angle CFG \cong \angle FCB$

(2) $\angle ABF \cong \angle BFC$

(3) $\angle EFB \cong \angle CFB$

(4) $\angle CBF \cong \angle GFC$

12.

The lines whose equations are $2x + 3y = 4$ and $y = mx + 6$ will be perpendicular when m is

(1) $-\frac{3}{2}$

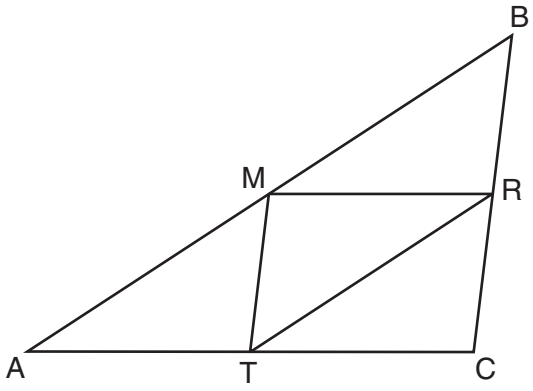
(2) $-\frac{2}{3}$

(3) $\frac{3}{2}$

(4) $\frac{2}{3}$

13.

As shown in the diagram below, M, R, and T are midpoints of the sides of $\triangle ABC$.

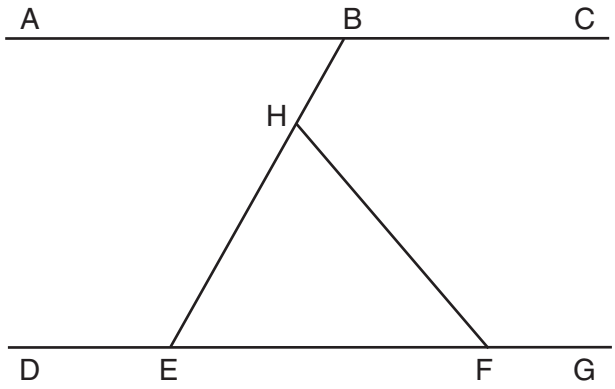


If $AB = 18$, $AC = 14$, and $BC = 10$, what is the perimeter of quadrilateral $ACRM$?

(1) 35
(2) 32
(3) 24
(4) 21

14.

In the diagram below, $\overline{ABC} \parallel \overline{DEFG}$. Transversal $\overline{BHE}$ and line segment HF are drawn.



If $m\angle HFG = 130$ and $m\angle EHF = 70$, what is $m\angle ABE$?

(1) 40
(2) 50
(3) 60
(4) 70