**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 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 and its endpoints *A*(2, 4) and *B*(-8, 6).

b. What are the coordinates of the midpoint of ?

**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 . 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*

a. Write each endpoint as an ordered pair

*A* =

*B* =

*B*

b. Calculate the coordinates of the midpoint of , *M*. Show your work and write your answer as an ordered pair. Label the midpoint on the graph.

**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.**



**8.**



**9.**



**10.**



**11.**



**12.**



**13.**



**14.**

