

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Unit 2: Analytic Geometry – Quiz #4

AG1 I am learning to develop and use the formula for midpoint of a line segment to solve problems.

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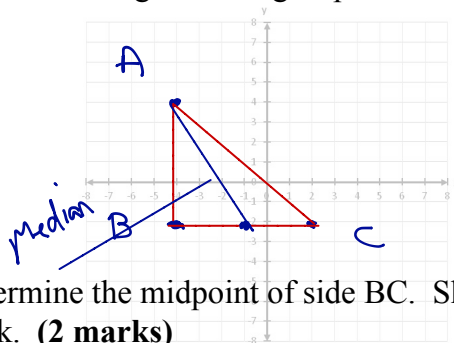
1.  $M = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$  Determine the coordinates of the midpoint of the line segment with endpoints (5, -3) and (-11, 5). Show your work. (2 marks)

$x_2, y_2$   $M = \left( \frac{5 + (-11)}{2}, \frac{-3 + 5}{2} \right)$   
 $= \left( \frac{-6}{2}, \frac{2}{2} \right)$

$x_1, y_1$   
 $M(-3, 1)$

2.  $\triangle ABC$  has vertices A(-4, 4), B(-4, -2), and C(2, -2).

a. Draw the triangle on the grid provided. (1 mark)



$M = \left( \frac{-4 + 2}{2}, \frac{-2 + (-2)}{2} \right)$   
 $M = \left( \frac{-2}{2}, \frac{-4}{2} \right)$   
 $M = (-1, -2)$

b. Determine the midpoint of side BC. Show your work. (2 marks)

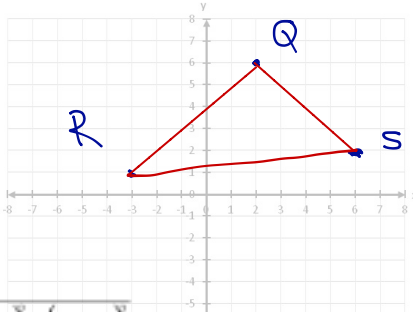
c. Draw the median of side BC. (1 mark)

AG2 I am learning to develop and use the formula for length of a line segment to solve problems.

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3.  $\triangle QRS$  has vertices at Q(2, 6), R(-3, 1), and S(6, 2)

a. Draw the triangle on the grid provided. (1 mark)



b.  $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$  Determine the length of side QR to the nearest tenth. Show your work. (3 marks)

$$d = \sqrt{(2 - (-3))^2 + (6 - 1)^2}$$

$$d = \sqrt{5^2 + 5^2}$$

$$d = \sqrt{25 + 25}$$

$$d = \sqrt{50}$$

$$d = 7.1$$

c. If the length of side QS is approximately 9.1 units and the length of side RS is approximately 5.7 units, calculate the perimeter of  $\triangle QRS$ . Show your work. (2 marks)

$$\downarrow P = 5 + 5 + 5$$

$$= 9.1 + 5.7 + 7.1$$

$$P = 21.9 \text{ units}$$