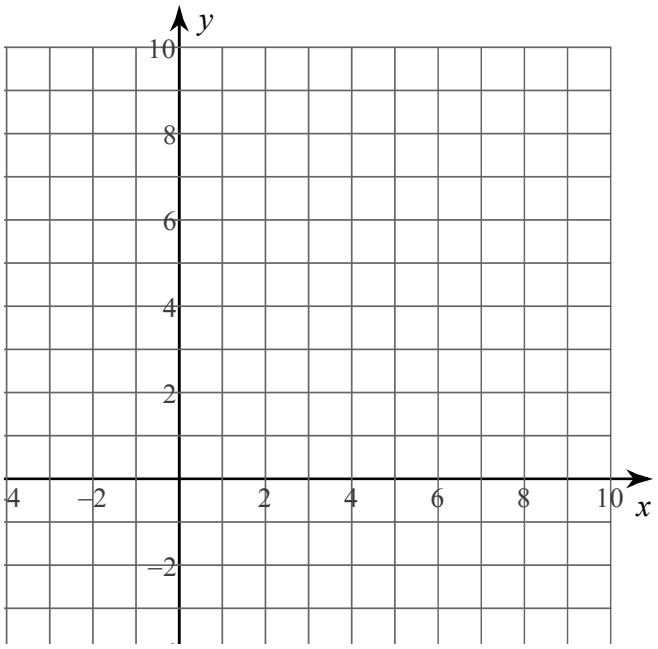
BECA / Dr. Huson / Geometry Name:
10 October 2018

1. Midpoint

a) Plot and label line segment $\overline{RS}$ and its endpoints $R(9,8)$ and $S(1,4)$

b) Solve for the coordinates of the midpoint M of $\overline{RS}$



i) *Geometry*: State the equation for the midpoint.

ii) *Substitution*: Replace variables with values.

iii) *Algebra*: Solve for unknowns. (put your result in the box)

$M = ($, $)$

iv) *Check*: Mark M on the graph. Does it bisect $\overline{RS}$? Count the squares across the x and y dimensions.

v) Would the midpoint of the segment $\overline{RS}$ be the same as the midpoint of the segment $\overline{SR}$? Why or why not.

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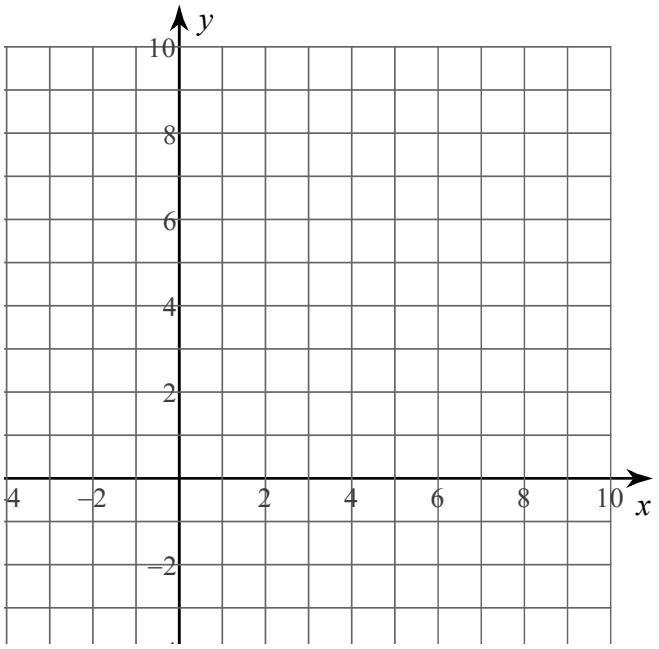
2. The endpoints of $\overline{PQ}$ are $P(2, 1)$ and $Q(6, 4)$. Find the length PQ. Show the formula, and then make the calculation. Check by plotting and labeling $\overline{PQ}$.

i) *Geometry*: State the (Pythagorean) length formula.



ii) *Substitution*: Replace variables with values.

iii) *Algebra*: Calculate the length

$PQ =$

iv) *Check*: With a compass construct an arc equating $\overline{PQ}$ to a horizontal or vertical distance. Do your graphical and algebraic lengths match?

v) Can you simply count the squares that $\overline{PQ}$ crosses diagonally to determine its length? Why or why not?