BECA / Dr. Huson / Geometry 10th Grade Name: .
Learning trajectory: Segments

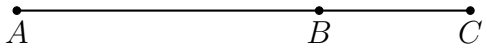
Segment addition and partition

1. Segment addition
2. Midpoint calculation
3. Midpoint on the x-y plane
4. Ratio partition
5. Applied to triangle legs

Segment addition short questions

1. Given $\overline{ABC}$, $AC = 5\frac{1}{3}$, and $BC = 1$.

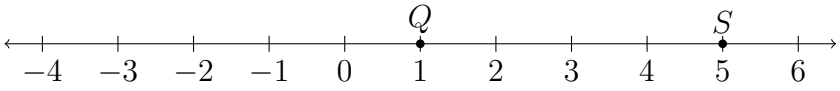
   (a) Find AB.



   (b) The postulate used in this problem is the _____.

Midpoint short questions

2. Given $\overleftrightarrow{QS}$ as shown on the number line.



   (a) Mark the point R, the midpoint of $\overline{QS}$.

   (b) The point P is collinear with $\overleftrightarrow{QS}$ such that Q is the midpoint of $\overleftrightarrow{PS}$. Mark P on the line.

Midpoint on the x-y plane

3. In the diagram below, $\overleftrightarrow{AC}$ has endpoints with coordinates $A(-3, 2)$ and $C(3, -7)$.

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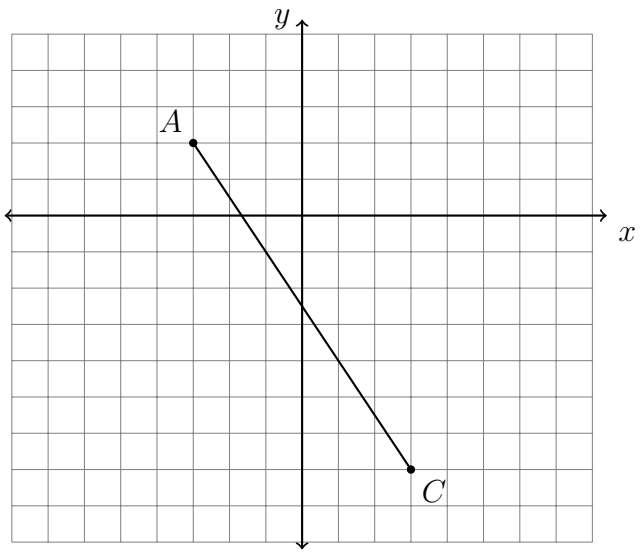

If B is a point on and $AB{:}BC = 1{:}2$, what are the coordinates of B?

Segment addition algebra

4. Given collinear points P, Q, R with Q bisecting the line segment $\overline{PR}$. $PQ = x - 2$ and $QR = \frac{1}{2}x + 6$. Find the length of $\overline{PR}$.
   First label the drawing.

   (a) Write a geometric equation: _____ _____
   (b) Substitute algebraic values: _____
   (c) Solve for x
   (d) Answer the question:
   (e) Check your answer

5. *variation* Given collinear points P, Q, R with Q bisecting the line segment $\overline{PR}$. $PQ = \frac{1}{2}x + 4$ and $PR = 4x$. Find the length of $\overline{PR}$.