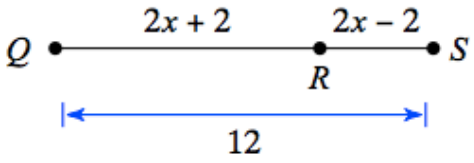
Geometry
Unit 1 Geometry Essentials
1.2a Lengths of Segments
(using coordinates and segment addition)

Mathematician: _____
Period:_____

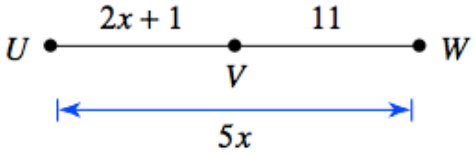
LEVEL: EMERGING

Directions: Solve for x.

1)



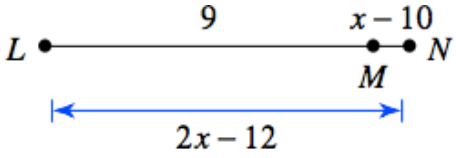
2)



LEVEL: PROFICIENT

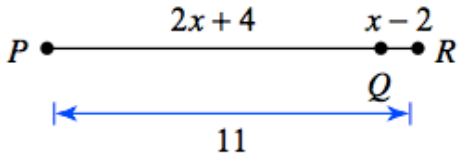
Directions: Find the length of the given segment given the following.

3) a) Find $\overline{MN}$.



b) Find the ratio of $\overline{NM}$ to $\overline{ML}$.

4) a) Find $\overline{PQ}$.

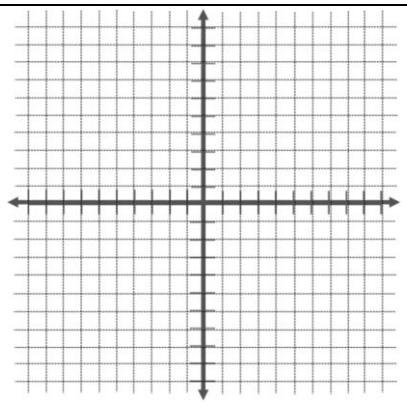


b) Find the ratio of $\overline{PQ}$ to $\overline{QR}$.

5) The endpoints of $\overline{AB}$ are at (9,4) and (9,9). One of the endpoints of $\overline{CD}$ is at (-7,1). If $\overline{AB} \cong \overline{CD}$, and $\overline{CD}$ is in entirely in the second quadrant, what is the other endpoint of $\overline{CD}$?

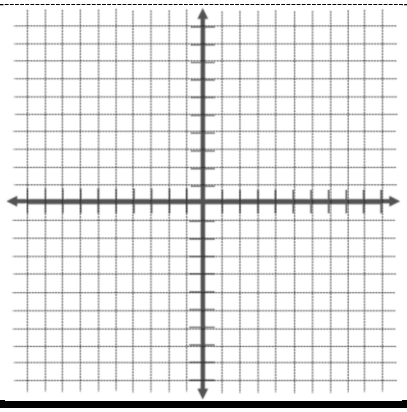
_____

(Draw the two line segments on the graph to the right)



6) a) The endpoints of $\overline{MN}$ are at (7,5) and (7,-2). The endpoints of $\overline{GH}$ are at (6,-10) and (1, -10).

(Draw the two line segments on the graph to the right.)



b) Is $\overline{MN} \cong \overline{GH}$? Explain.

LEVEL: MASTERY

Directions: Points A, B and C are collinear, with B in between A and C. Use the following information to solve for the length of the indicated line segment.

7) $\overline{AC} = 9x$, $\overline{BC} = 3x + 8$, and $\overline{AB} = 2x$. Find the length of $\overline{BC}$.

$\overline{BC}$ = _____

8) $\overline{AB} = x + 9, \overline{BC} = x + 5$ and $\overline{AC} = 7x + 2$. Find the length of $\overline{AC}$.

$\overline{AC}$ = _____

9) $\overline{XZ} = 4 - 6x$, $\overline{YZ} = 6 - x$, and $\overline{XY} = 7 - 2x$. Find the length of $\overline{XY}$.

$\overline{XY}$ = _____

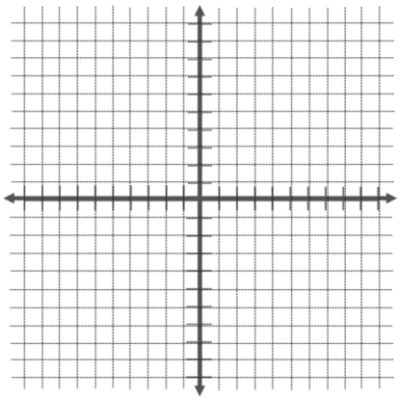
10) $\overline{RS} = 2x^2 + 15x + 25, \overline{ST} = 10$ and $\overline{RT} = x^2 + 12x + 45$. Find the length of $\overline{RS}$.

$\overline{RT}$ = _____

11) a) The endpoints of $\overline{AB}$ are at (2,1) and (2,6). One of the endpoints of $\overline{CD}$ is at (-10,3). If $\overline{AB} \cong \overline{CD}$, and $\overline{CD}$ is in the second quadrant, and is parallel to the x-axis, what is the other endpoint of $\overline{CD}$?

_____

Draw the two line segments on the graph to the right.



b) Draw a line segment $\overline{EF}$ on the graph such that $\overline{AB} \cong \overline{CD} \cong \overline{EF}$. What are the ordered pairs of your endpoints?

_____ and _____