Geometry Honors
Unit 1 Geometry Essentials
1.2c Determine Length, Midpoint, and Ratios of Segments

Mathematician: _____
Period:_____

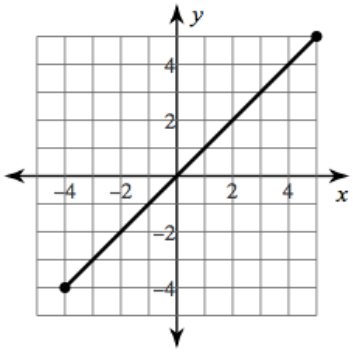
LEVEL: EMERGING

Directions: Find the length of the following line segments.

1) $(-3,-1)$ *and* $(-4,6)$

2) $(2.4,1.3)$ *and* $(-6.7,-6.6)$

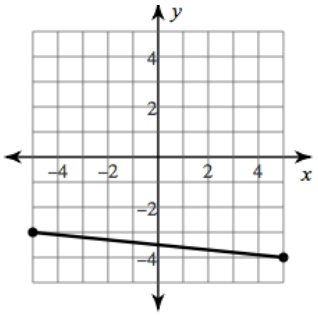
3)



Directions: For questions 4 and 5, find the midpoint of the following line segments.

4) $(2.8,.1)$ *and* $(-5.6,-6.3)$

5)

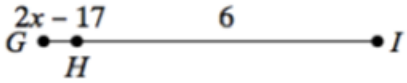


6) Given one endpoint and the midpoint, find the other endpoint.
Endpoint: (3.4, -6.2)
Midpoint: (-4.7, -12.9)

LEVEL: PROFICIENT

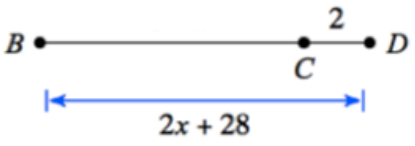
Directions: Use the given ratio to solve for the length of the indicated segment.

7) $\frac{m\overline{GH}}{m\overline{GI}} = \frac{2}{5}$



$m\overline{GH}$ = _____

8) $\frac{m\overline{BD}}{m\overline{BC}} = \frac{7}{6}$



$m\overline{BD}$ = _____

9) The $m\overline{AC}$ is 127. $\overline{AB}$ is represented by the expression $15x + 11$, and $\overline{BC}$ is represented by the expression $10x - 4$. What is the length of $\overline{AB}$?

10) The $m\overline{BD}$ is $3x^2 + 2x - 18$. $\overline{BC}$ is represented by the expression $x^2 + 8$, and $\overline{CD}$ is represented by the expression $x^2 - 11$. What is the length of $\overline{BC}$?

LEVEL: MASTERY

Directions: Points A, B, and C are collinear and positioned in that order. Find the indicated length.

11) If $AC = 9x^2 - 16x - 90$, $AB = 3x^2$, and $BC = 4x^2 + 6$, find $m\overline{AB}$.

12) Find $m\overline{BC}$ if the ratio $\frac{\overline{BC}}{\overline{AC}} = \frac{1}{5}$, $AB = 10x + 498$, and $BC = 2x + 155$.

13) Find $m\overline{AC}$ if the ratio $\frac{\overline{AB}}{\overline{BC}} = \frac{3}{4}$, $AB = 2x + 7$, and $BC = x + 5$.

14) Find the location of point H that divides the line segment GI into two parts with the ratio 2:3. The length of GI is 14.

$\overline{GH} =$ _____

15) Find the location of point C that divides the line segment BD into two parts with the ratio 5:3. The length of BD is 44.

$\overline{BC} =$ _____