Name Key Date _____ Pd __

CYU 1.2 Segments

☑ Use when you get it right all by yourself

S Use when you did it all by yourself, but made a silly mistake

H Use when you could do it alone with a little help from teacher or peer

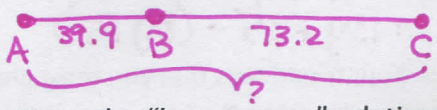
G Use when you completed the problem in a group

X Use when a question was attempted but wrong (get help)

N Use when a question was not even attempted

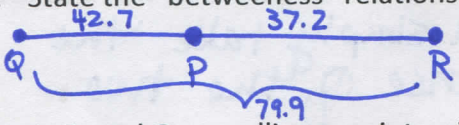
CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Compute distance on a number line.	1, 2	9	3, 10
Segment addition postulate.	7	5, 6, 8a	4, 8b, 11

1. Suppose B is between A and C. If BC = 73.2u and AB = 39.9u, what is AC?



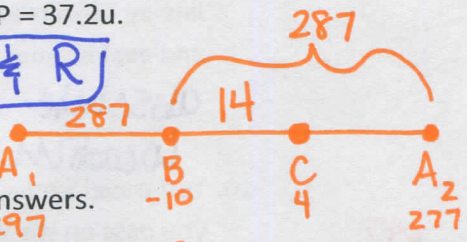
$AC = AB + BC$
$= 39.9 + 73.2$
$AC = 113.1u$

2. State the "betweeness" relationship if QP = 42.7u, QR = 79.9u, and RP = 37.2u.



P is between Q & R

3. A, B, and C are collinear points with coordinates a, b, c respectively.



a. If b = -10, c = 4 and BA = 287u, find BC and CA, give 2 possible answers.

$BC = |-10 - 4| = |-14| = 14u$

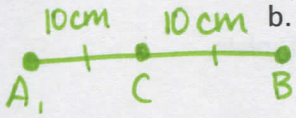
$AC = 287 + 14 = 301u$ $a = 277$

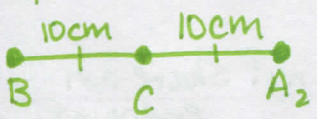
$A_2C = 287 - 14 = 273u$ $a = -297$

$BA = |a - b|$

$287 = |a - (-10)|$ → $287 = a + 10$ or $-287 = a + 10$

b. C is between A and B. AC = BC, CB = 10cm, and c = 14. Give 2 possible coordinates for A.



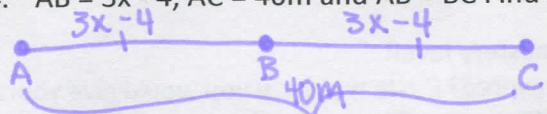


AB or BA

$a_1 = 14 - 10 = 4$

$a_2 = 14 + 10 = 24$

4. AB = 3x - 4, AC = 40m and AB = BC Find x.



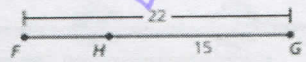
$40 = 3x - 4 + 3x - 4$

$40 = 6x - 8$

$48 = 6x$

$x = 8$

5. Find FH.

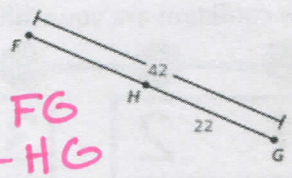


$FH + HG = FG$

$FH = FG - HG$

$x = 22 - 15 = 7$

6. Find FH.



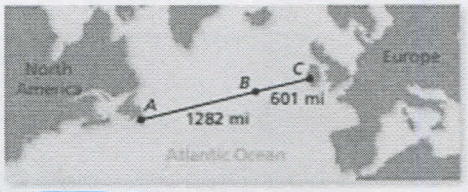
$FH + HG = FG$

$FH = FG - HG$

$x = 42 - 22$

$x = 20$

7. In 2003, a remote-controlled model airplane became the first ever to fly nonstop across the Atlantic Ocean. The map shows the airplane's position at three different points during its flight. Point A represents Cape Spear, Newfoundland, point B represents the approximate position after 1 day, and point C represents Mannin Bay, Ireland. The airplane left Cape Spear and landed in Mannin Bay.



   a. Find the total distance the model airplane flew.

   $AB + BC = AC \Rightarrow 1282 + 601 = \boxed{1883 \text{ mi}}$

   b. The model airplane's flight lasted nearly 38 hours. Estimate the airplane's average speed in miles per hour.

   $D = rt$

   $1883 = r(38)$

   $r = \frac{1883}{38} \approx 49.553$

   $\therefore 50 \text{ mi/h}$

8. Write an expression for the length of the segment.

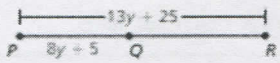
   a. $\overline{AC}$

   $AB + BC = AC$

   $x + 2 + 7x - 3$

   $\boxed{8x - 1}$

   b. $\overline{QR}$



   $PQ + QR = PR$

   $QR = PR - PQ$

   $= 13y + 25 - (8y + 5)$

   $= 13y + 25 - 8y - 5$

   $= \boxed{5y + 20}$

9. Your friend and your cousin discuss measuring with a ruler. Your friend says that you must always line up objects at the zero on a ruler. Your cousin says it does not matter. Decide who is correct and explain your reasoning in words. Cousin, you simply take the absolute value of the difference of the two locations.

10. You travel from City X to City Y. You know that the round-trip distance is 647 miles. City Z, a city you pass on the way is 27 miles from City X. Find the distance from City Z to City Y. Justify your answer.

    $= \frac{647}{2}$

    $= 323.5$

    $XY = XZ + ZY$

    $XY - XZ = ZY$

    $323.5 - 27 = \boxed{296.5 \text{ mi}}$

11. Is it possible to use the Segment Addition Postulate to show FB > CB or that AC > DB? Explain your reasoning.

    yes, no; $FC + CB = FB$ so $FB > CB$.

    $\overline{AC}$ & $\overline{DB}$ overlap, but do not share an endpoint.

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.