Section 1.2: Linear Measure

Content Standards

- G.CO.1 Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.
- G.CO.12 Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.).

Objectives

- Measure segments.
- Calculate with measures.

New Vocabulary

- line segment
- betweenness of points
- between
- congruent segments
- construction

Aug 17-9:18 PM

Find the length of $\overline{FG}$.

$FG = 2\frac{3}{4}$ in

Aug 19-10:45 AM

Find the length of $\overline{IX}$.

$IX = 2\frac{1}{4}$ in

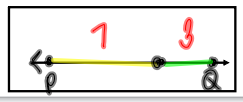
Aug 19-10:49 AM

KeyConcept Betweenness of Points

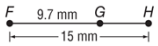
Words

Point M is between points P and Q if and only if P, Q, and M are collinear and $PM + MQ = PQ$.

Model



1. Find GH. _____



F, G, H are collinear → FG + GH = FH

(9.7) + S = (15)
−9.7 −9.7

S = 5.3

GH = 5.3 mm

Aug 19-10:29 AM

K is between J and L. Make a sketch and find the value of x, KL, JK, and JL.

2. $JK = 6x$, $KL = 3x$, and $JL = 27$

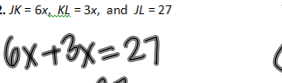
$6x + 3x = 27$

$9x = 27$

$x = 3$

$6x = 6 \cdot 3 = 18$

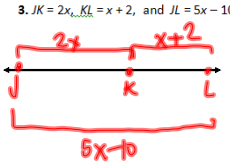
$3x = 3 \cdot 3 = 9$



Conclusion: J, K, L are collinear

$JK + KL = JL$

3. $JK = 2x$, $KL = x + 2$, and $JL = 5x - 10$



$(2x) + (x + 2) = 5x - 10$

$3x + 2 = 5x - 10$

$2 = 2x - 10$

$x = 6$

$JK = 2(6) = 12$

$KL = 6 + 2 = 8$

$JL = 5(6) - 10 = 20$

Aug 21-1:10 PM