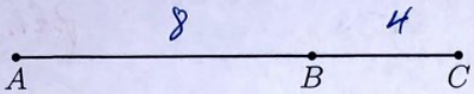
BECA / Dr. Huson / Geometry
1-3 Mastery assessment (Open book)

Name: Solutions

**I can solve for segment lengths**

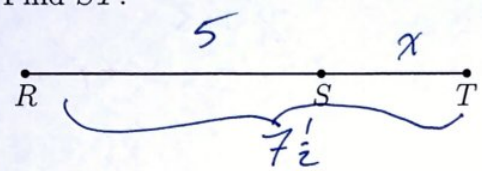
1. Given $\overline{ABC}$, $AB = 8$, and $BC = 4$. Find $AC$.




$AC = 8 + 4 = 12$ +1

2. Given $\overline{RST}$, $RS = 5$, and $RT = 7\frac{1}{2}$.

(a) Find $ST$.



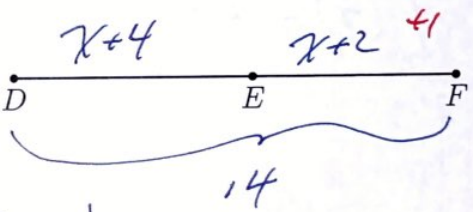

$5 + x = 7\frac{1}{2}$

$x = 7\frac{1}{2} - 5 = 2\frac{1}{2}$ +1

(b) The postulate used in this problem is the Segment addition Postulate +1

3. Given $\overline{DEF}$, $DE = x + 4$, $EF = x + 2$, $DF = 14$. Find $DE$.

(a) Label the diagram with the given values.




+1

(b) Write an equation:

$(x + 4) + (x + 2) = 14$ +1

(c) Solve for $x$

$2x + 6 = 14$

$2x = 8$

$x = 4$ +1

(d) Answer the question.
Find $DE$ by substituting for $x$.

$DE = (4) + 4 = 8$ +1

(e) Check your answer

$((4) + 4) + ((4) + 2) \stackrel{?}{=} 14$

$8 + 6 = 14$ ✓ +1

8/8

G.MG.1

4. Early finishers: In the following two problems, solve for the value of $x$.

REL. B.3

(a) $3x - 3 = x + 7$

$-x \quad +3 \quad -x \quad +3$

$2x = 10$

$x = 5$ +1

(b) $\frac{1}{2}(4x + 2) = 7$

$2x + 1 = 7$

$-1 \quad -1$

$2x = 6$

$x = 3$ +1

5. Given the linear function $f(x) = 2x - 6$.

(a) $f(x) = 0$. Find $x$.

$f(x) = 2x - 6 = 0$

$+6 \quad +6$

$2x = 6$

$x = 3$ +1

(b) Find $f(2)$

$f(2) = 2(2) - 6$

$= 4 - 6$

$= -2$ +1

6. Given $x^2 + 8x + 7 = 0$. Factor and find the roots.

$(x+7)(x+1) = 0$ +1

REL B.4

$x = -7, \quad x = -1$ +1

6/6