

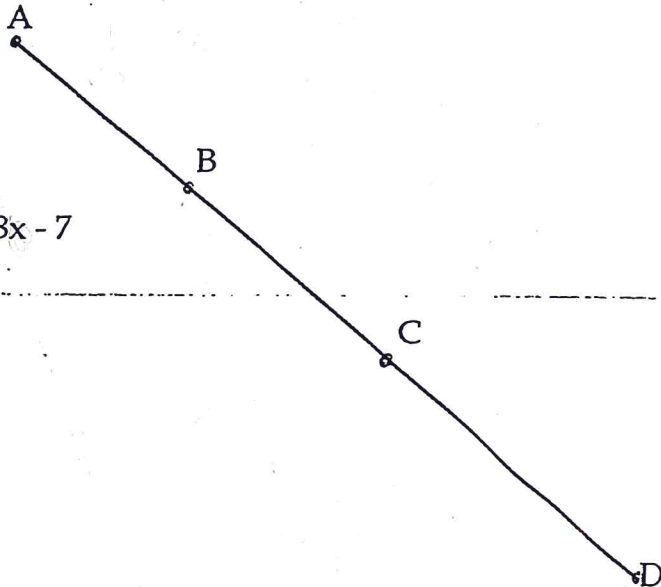
Math 101

Geometry Worksheet  
Chapter 2.1-2 - Algebra Application

Segment Addition (1-2)

1.  $AB = x$ ,  $BC = 3x$ ,  $CD = 2x + 8$  and  $AD = 22$   
Find  $CD$ .

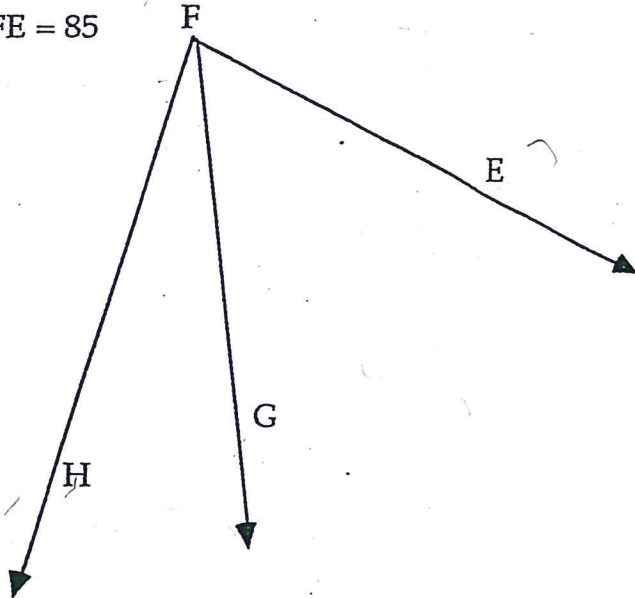
2.  $AB = 3$ ,  $BC = 2x + 3$ ,  $CD = 3x + 5$  and  $AD = 8x - 7$   
Find  $AD$ .



Angle Addition (3-4)

3.  $m\angle HFG = 2x - 7$ ,  $m\angle GFE = 3x + 2$ , and  $m\angle HFE = 85$   
Find  $m\angle GFE$ .

4.  $m\angle HFG = 2x$ ,  $m\angle GFE = 4x + 13$ ,  
and  $m\angle HFE = 8x - 7$   
Find  $m\angle HFE$ .



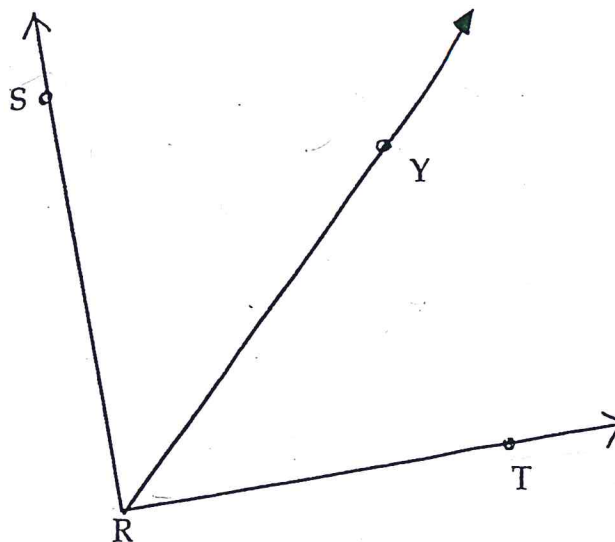
Geometry Worksheet  
Chapter 2.3

Work the problems on a separate sheet of paper. You must show work to get credit.

- 1)  $m\angle TRY = 4x + 12$   
 $m\angle SRY = 3x + 18$   
Find the  $m\angle SRT$ .

- 2)  $m\angle SRT = 58$  and  $m\angle TRY = 4x - 3$ . Find  $x$ .

- 3)  $m\angle SRY = 5x + 17$  and  $m\angle TRY = 8x - 10$ .  
Find  $m\angle SRT$ .

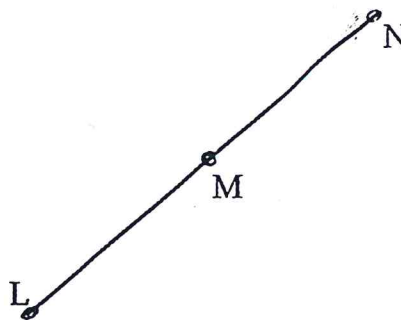


$\vec{RY}$  is the angle bisector of  $\angle SRT$

- 4)  $LM = 6x - 5$   
 $MN = 5x + 8$   
Find  $LN$ .

M is the midpoint of  $\overline{LN}$

- 5)  $LN = 8x - 12$   
 $MN = 3x + 8$   
Find  $LM$ .



- 6)  $LN = 14$  and  $MN = 3x - 5$ . Find  $x$ .

Geometry Worksheet  
Chapter 2.3

Work the problems on a separate sheet of paper. You must show work to get credit.

- ✓ 1)  $m\angle TRY = 4x + 12$   
 $m\angle SRY = 3x + 18$   
 Find the  $m\angle SRT$ .

$$\begin{array}{r} 4x+12 = 3x+18 \\ -3x-12 \quad -3x-12 \\ \hline x = 6 \end{array}$$

$72^\circ$   $4(6)+12 = 36+12 = 48$

- 2)  $m\angle SRT = 58$  and  $m\angle TRY = 4x - 3$ . Find  $x$ .

$$\frac{58}{2} = 4x - 3$$

$x = 8$

$$\begin{array}{l} 29 = 4x - 3 \\ 32 = 4x \\ x = 8 \end{array}$$

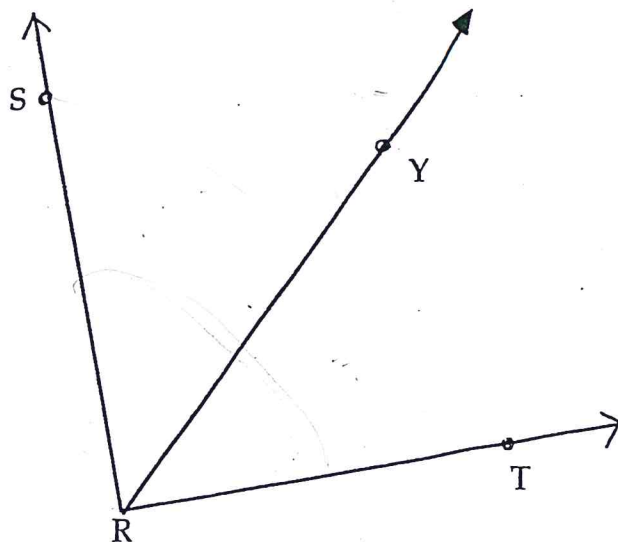
- 3)  $m\angle SRY = 5x + 17$  and  $m\angle TRY = 8x - 10$ .  
 Find  $m\angle SRT$ .

$124^\circ$

$$5x + 17 = 8x - 10$$

$$\begin{array}{l} 27 = 3x \\ x = 9 \end{array}$$

$$\begin{array}{l} 8(9) - 10 = 62 \\ 62 \cdot 2 = 124^\circ \end{array}$$



$\vec{RY}$  is the angle bisector of  $\angle SRT$

- ✓ 4)  $LM = 6x - 5$   
 $MN = 5x + 8$   
 Find  $LN$ .

$$\begin{array}{l} 6x-5 = 5x+8 \\ x = 13 \end{array}$$

$146$

$$\begin{array}{l} 6(13) - 5 = 73 \\ 73 \cdot 2 = 146 \end{array}$$

- 5)  $LN = 8x - 12$   
 $MN = 3x + 8$   
 Find  $LM$ .

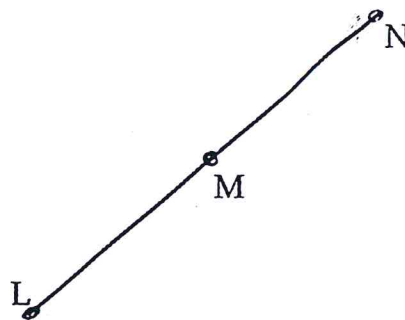
$$\frac{8x-12}{2} = 3x + 8$$

$$\begin{array}{l} 4x-6 = 3x+8 \\ x = 6 = 14 \\ x = 14 \end{array}$$

~~100~~  
 $50$

$3 \cdot 14 + 8 = 50$

M is the midpoint of  $\overline{LN}$



- 6)  $LN = 14$  and  $MN = 3x - 5$ . Find  $x$ .

$x = 4$

$$\begin{array}{l} 7 = 3x - 5 \\ 12 = 3x \\ x = 4 \end{array}$$

Geometry Worksheet

Chapter 2.1-2 - Algebra Application

Segment Addition (1-2)

1.  $AB = x$ ,  $BC = 3x$ ,  $CD = 2x + 8$  and  $AD = 22$   
Find CD.

$$x + 3x + 2x + 8 = 22$$

$$6x + 8 = 22$$

$$6x = 14$$

$$x = \frac{14}{6} = \frac{7}{3} = 2\frac{1}{3}$$

2.  $AB = 3$ ,  $BC = 2x + 3$ ,  $CD = 3x + 5$  and  $AD = 8x - 7$   
Find AD.

$$3 + 2x + 3 + 3x + 5 = 8x - 7$$

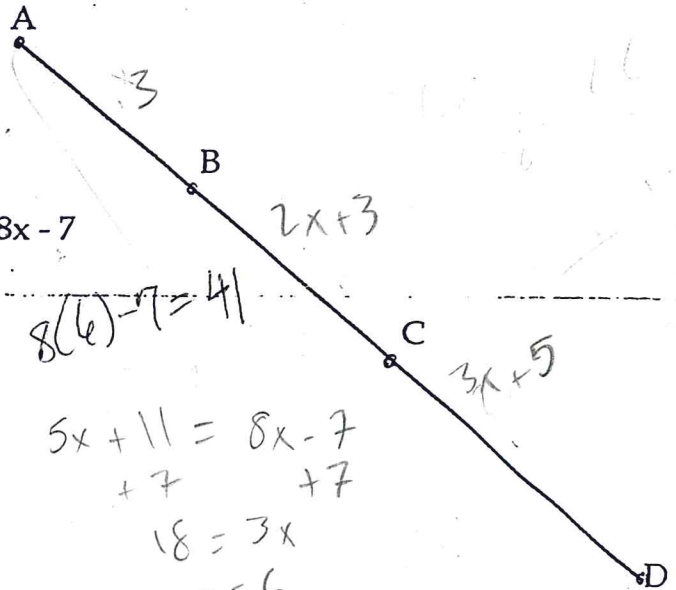
$$5x + 11 = 8x - 7$$

$$\begin{array}{r} -5x & -5x \\ \hline 11 & = 3x - 7 \\ +7 & +7 \\ \hline 18 & = 3x \end{array}$$

$$18 = 3x$$

$$6 = x$$

$$x = 6$$



Angle Addition (3-4)

3.  $m\angle HFG = 2x - 7$ ,  $m\angle GFE = 3x + 2$ , and  $m\angle HFE = 85$   
Find  $m\angle GFE$ .

$$2x - 7 + 3x + 2 = 85$$

$$5x - 5 = 85$$

$$5x = 90$$

$$x = 18$$

$$3(18) + 2 = 56^\circ$$

4.  $m\angle HFG = 2x$ ,  $m\angle GFE = 4x + 13$ ,  
and  $m\angle HFE = 8x - 7$   
Find  $m\angle HFE$ .

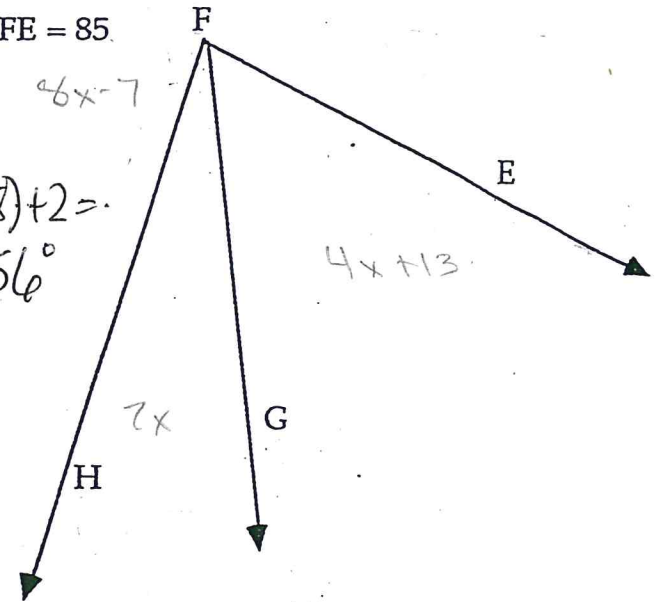
$$2x + 4x + 13 = 8x - 7$$

$$6x + 13 = 8x - 7$$

$$\begin{array}{r} -6x & -6x \\ \hline 13 & = 2x - 7 \end{array}$$

$$20 = 2x$$

$$x = 10$$



$$8(10) - 7 = 73^\circ$$