

**Part I. Segment Addition Postulate:**

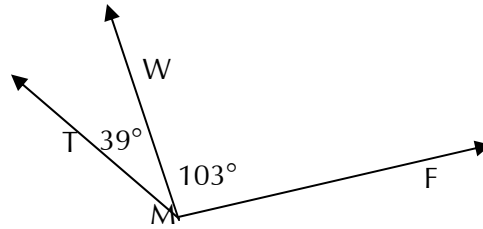
- 1) Draw a sketch of the three collinear points and then write the Segment Addition Postulate for the points.  
"A is between T and Q"
  
- 2) S is between T and V. R is between S and T. T is between R and Q.  $QV = 18$ ,  $QT = 6$  and  $TR = RS = SV$ . Make a sketch and find the following.
  - a) Find RS
  - b) Find QS
  - c) Find TS
  - d) Find TV
  
- 3) K is between J and M. L is between K and M. M is between K and N.  $JN = 14$ ,  $KM = 4$  and  $JK = KL = LM$ . Make a sketch and find the following.
  - a) Find JK
  - b) Find KN
  - c) Find MN
  - d) Find LJ
  - e) Find MJ
  - f) Find NL
  
- 4) Suppose J is between H and K. Use the Segment Addition Postulate to solve for x. Then find the length of each segment.

a) $HJ = 2x + 4$	b) $HJ = 5x - 3$	c) $HJ = 2x + \frac{1}{3}$	d) $HJ = \frac{1}{2}x + 2$
$JK = 3x + 3$	$JK = 8x - 9$	$JK = 5x + \frac{2}{3}$	$JK = 3x + \frac{3}{2}$
$KH = 22$	$KH = 131$	$KH = 12x - 4$	$KH = 5x + 2$

**Part II: Angle Addition Postulate:**

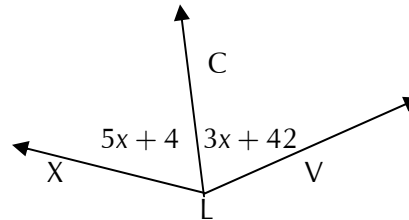
5) Use the Angle Addition Postulate to find the measure of the unknown angle.

a)  $m \angle TMF =$  \_\_\_\_\_

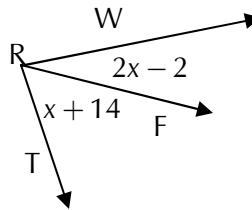


b)  $m \angle XLC =$  \_\_\_\_\_

$m \angle XLV = 150^\circ$



c)  $m \angle WRF =$  \_\_\_\_\_



6) Q is in the interior of  $\angle ROS$ . S is in the interior of  $\angle QOP$ . P is in the interior of  $\angle SOT$ ;  $m \angle ROT = 160^\circ$ ,  $m \angle SOT = 100^\circ$  and  $m \angle ROQ = m \angle QOS = m \angle POT$ .  
Make a sketch and find the following angle measures.

a)  $m \angle QOP$

b)  $m \angle QOT$

c)  $m \angle ROQ$

d)  $m \angle SOP$

7) Let Q be in the interior of  $\angle POR$ . Solve for x and find the measure of each angle.

a)  $m \angle POQ = x + 4$   
 $m \angle QOR = 2x - 2$   
 $m \angle POR = 26$

b)  $m \angle POQ = 3x + 6$   
 $m \angle QOR = 2x + 11$   
 $m \angle POR = 8x - 4$

c)  $m \angle POQ = x^2 + x$   
 $m \angle QOR = 2x + 4$   
 $m \angle POR = 6x + 14$