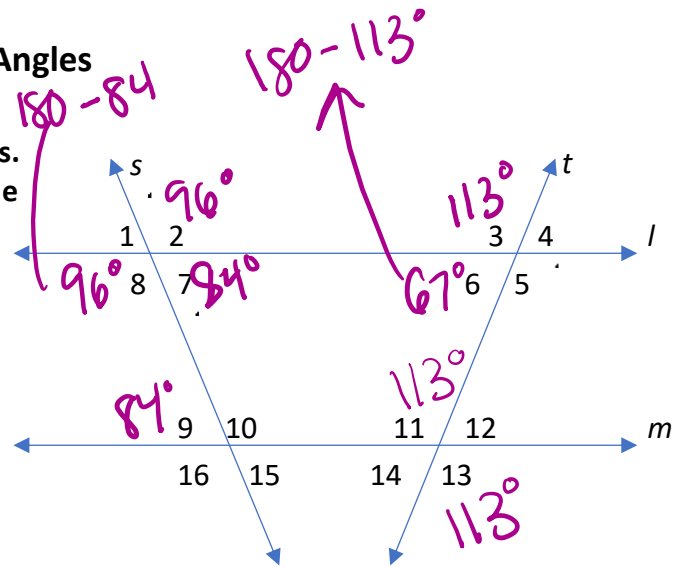


## Parallel Lines and Angles

Lines  $l$  and  $m$  are parallel. Lines  $s$  and  $t$  are transversals. If  $m\angle 3 = 113^\circ$  and  $m\angle 9 = 84^\circ$ , what are the values of the missing angles?

1)  $m\angle 11 = \underline{113}$  (corresponding)  $m\angle 6 = \underline{67}$  (linear pair)  
 $m\angle 13 = \underline{113}$  (vertical)  $m\angle 8 = \underline{96}$  (linear pair)  
 $m\angle 7 = \underline{84}$  (alternate interior)  $m\angle 2 = \underline{96}$  (vertical)



What are the values of  $x$  if lines  $l$  and  $m$  are parallel and line  $t$  is a transversal?

2)  $m\angle 1 = 38^\circ$ ;  $m\angle 5 = 4x - 22$

$\angle 1$  &  $\angle 5$  are corresponding  
 $4x - 22 = 38$   
 $+22 \quad +22$   
 $4x = 60$   
 $\frac{4x}{4} = \frac{60}{4}$   
 $x = 15$

3)  $m\angle 2 = 9x + 31$ ;  $m\angle 8 = 148^\circ$

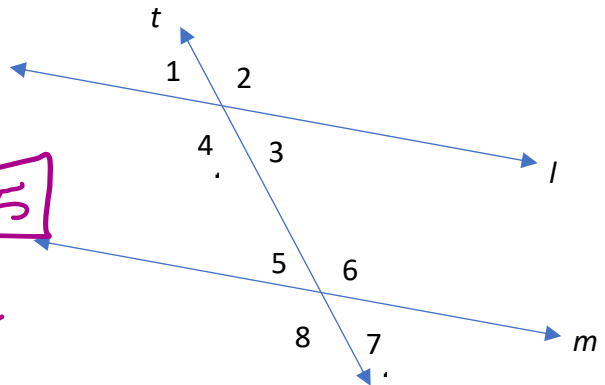
$\angle 2$  &  $\angle 8$  are alternate exterior  
 $9x + 31 = 148$   
 $-31 \quad -31$   
 $9x = 117$   
 $\frac{9x}{9} = \frac{117}{9}$   
 $x = 13$

4)  $m\angle 3 = 52^\circ$ ;  $m\angle 5 = 6x - 14$

$\angle 3$  &  $\angle 5$  are alternate interior  
 $52 = 6x - 14$   
 $+14 \quad +14$   
 $66 = 6x$   
 $\frac{66}{6} = \frac{6x}{6}$   
 $x = 11$

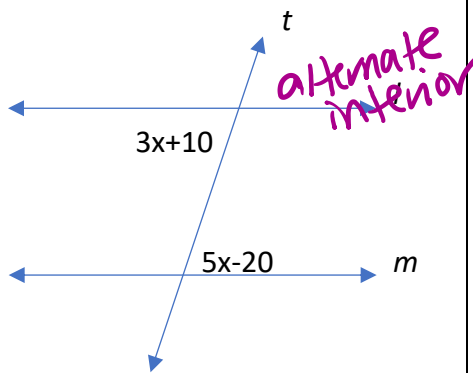
5)  $m\angle 4 = 8x + 21$ ;  $m\angle 5 = 4x - 9$

$\angle 4$  &  $\angle 5$  are supplementary  
 Same side interior  
 $8x + 21 + 4x - 9 = 180$   
 $12x + 12 = 180$   
 $-12 \quad -12$   
 $12x = 168$   
 $\frac{12x}{12} = \frac{168}{12}$   
 $x = 14$



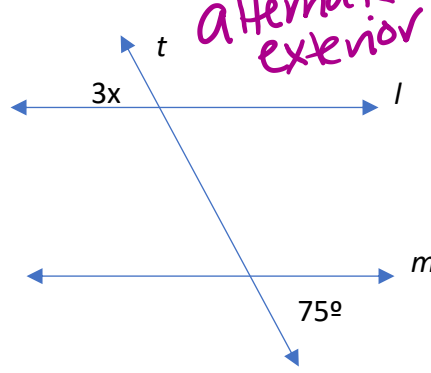
What are the value of  $x$  based on the given information?

6)  $l \parallel m$



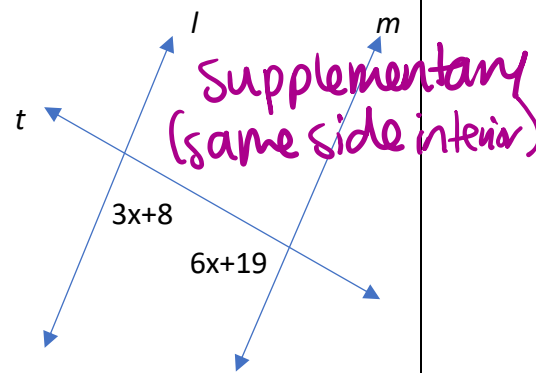
$3x + 10 = 5x - 20$   
 $-3x \quad -3x$   
 $10 = 2x - 20$   
 $+20 \quad +20$   
 $30 = 2x$   
 $\frac{30}{2} = \frac{2x}{2}$   
 $x = 15$

7)  $l \parallel m$



$3x = 75$   
 $\frac{3x}{3} = \frac{75}{3}$   
 $x = 25$

8)  $l \parallel m$



$3x + 8 + 6x + 19 = 180$   
 $9x + 27 = 180$   
 $-27 \quad -27$   
 $9x = 153$   
 $\frac{9x}{9} = \frac{153}{9}$   
 $x = 17$

## Parallel Lines and Angles

$$6) x=15$$

$$7) x=25$$

$$8) x=17$$

## Parallel Lines and Angles