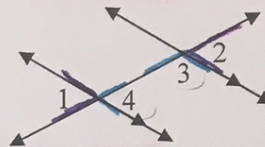


Parallel Lines and Angle Relationships Practice

For #1-5 find the missing variable and then explain your reason in if-then form.

1. $m\angle 1 = (3x - 17)^\circ$ $m\angle 3 = (20k + 11)^\circ$
 $m\angle 2 = (x + 1)^\circ$ $m\angle 4 = (8k + 1)^\circ$

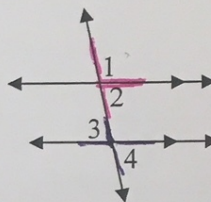
$3x - 17 = x + 1$ $20k + 11 + 8k + 1 = 180$
 $2x = 18$ $28k + 12 = 180$
 $x = 9$ $28k = 168$
 $k = 6$



$x = 9$; If 2 || lines are cut by transversal then alt ext \angle s are \cong
 $k = 6$; If 2 || lines are cut by transversal then Consecutive int. \angle s are supp

2. $m\angle 1 = (95 + 3h)^\circ$ $m\angle 3 = (5k + 12)^\circ$
 $m\angle 2 = (55 - h)^\circ$ $m\angle 4 = (7k - 16)^\circ$

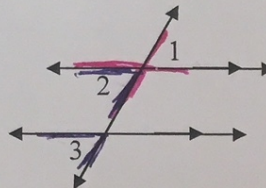
$95 + 3h + 55 - h = 180$ $5k + 12 = 7k - 16$
 $2h + 150 = 180$ $28 = 2k$
 $2h = 30$ $k = 14$
 $h = 15$



$h = 15$; If 2 \angle s form a linear pair then they are supp
 $k = 14$; If 2 \angle s are vertical \angle s then they are \cong

3. $m\angle 1 = (7y + 16)^\circ$
 $m\angle 2 = (2x)^\circ$
 $m\angle 3 = (4x - 30)^\circ$

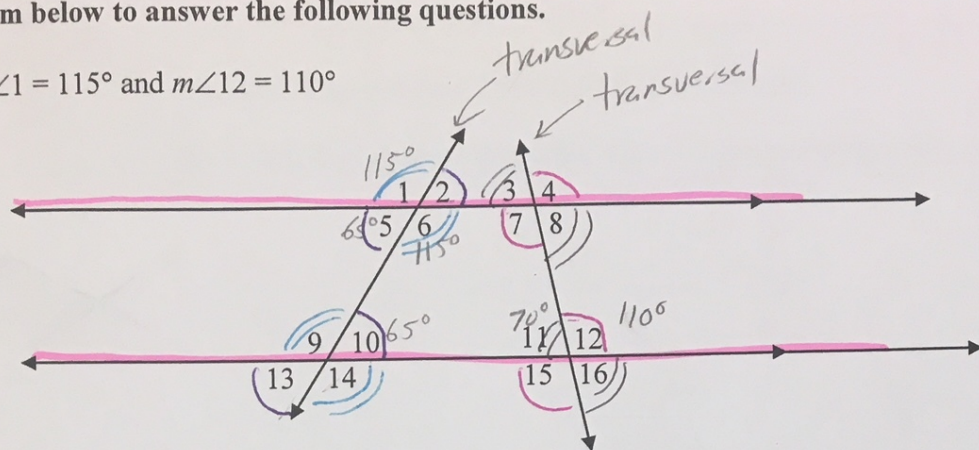
$2x = 4x - 30$ $m\angle 2 = 2(15) = 30$
 $-2x = -30$ $30 = 7y + 16$
 $x = 15$ $14 = 7y$
 $y = 2$



$x = 15$; If 2 || lines cut by transversal then Corresponding \angle s are \cong
 $y = 2$; If 2 \angle s are vertical \angle s then they are \cong

Use the diagram below to answer the following questions.

Part A: Let $m\angle 1 = 115^\circ$ and $m\angle 12 = 110^\circ$



4. $m\angle 9 = 115^\circ$	5. $m\angle 4 = 110^\circ$
6. $m\angle 10 = 65^\circ$	7. $m\angle 11 = 70^\circ$
8. $m\angle 8 = 70^\circ$	9. $m\angle 5 = 65^\circ$
10. $m\angle 3 = 70^\circ$	11. $m\angle 14 = 115^\circ$

Part B: State the angle relationship.

12. $\angle 7$ and $\angle 4$ Vertical \angle s
13. $\angle 6$ and $\angle 14$ Corresponding \angle s
14. $\angle 11$ and $\angle 12$ linear pair
15. $\angle 7$ and $\angle 11$ consecutive interior \angle s
16. $\angle 4$ and $\angle 15$ alt. exterior \angle s