

Worksheet #3 (Parallel Lines Cut by a Transversal)

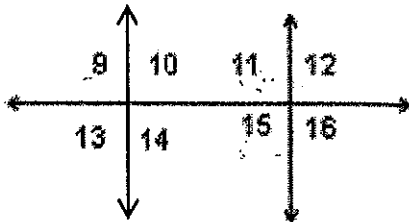
Name: Answer Date: _____ Period: _____

Use the figure at the right to answer problems 1- 8.

missing: consecutive (same side) interior ex: $\angle 15$ & $\angle 14$

Classify each pair of angles as one of the following:

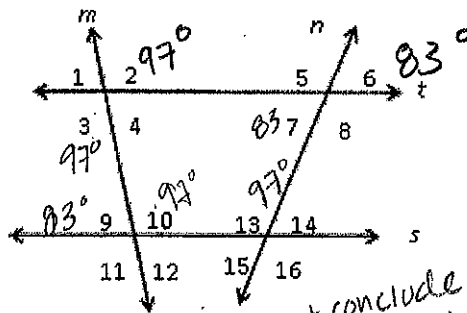
- (a) alternate interior angles
- (b) corresponding angles
- (c) alternate exterior angles
- (d) vertical angles
- (e) supplementary angles
- (f) none



- 1. C $\angle 9$ & $\angle 16$
- 2. e $\angle 15$ & $\angle 11$
- 3. A $\angle 10$ & $\angle 15$
- 4. d $\angle 12$ & $\angle 15$
- 5. b $\angle 9$ & $\angle 11$
- 6. f $\angle 9$ & $\angle 15$
- 7. e $\angle 13$ & $\angle 14$
- 8. a $\angle 14$ & $\angle 11$

9. $m\angle 2 = 97^\circ$ $m\angle 6 = 83^\circ$

$m\angle 3 = 97^\circ$ (vertical) $m\angle 5 = 97^\circ$ (180-83)
 $m\angle 10 = 97^\circ$ ($\angle 2$ & $\angle 10$ are corresp.) $m\angle 7 = 83^\circ$
 $m\angle 9 = 83^\circ$ ($\angle 3$ & $\angle 9$ are alt.) $m\angle 16 = 97^\circ$ (180-97)



CANT conclude on 10 & 13 because they aren't falling w/ parallel lines

Find the value of x given that $s \parallel t$

10. $m\angle 4 = 77^\circ$, $m\angle 8 = 4x + 57$ Corresponding Angles

$77 = 4x + 57$

$20 = 4x$

$5 = x$

11. $m\angle 3 = 5x + 13$, $m\angle 5 = 53^\circ$ Alternate interior angles

$5x + 13 = 53$

$5x = 40$

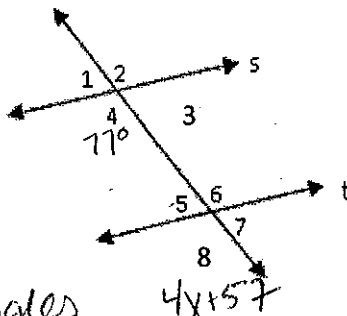
$x = 8$

12. $m\angle 1 = 6x - 5$, $m\angle 7 = 115^\circ$ Alternate exterior angles

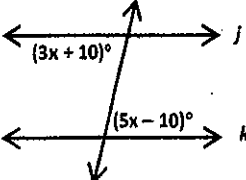
$6x - 5 = 115$

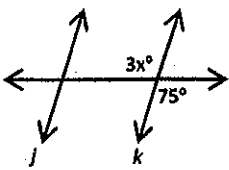
$6x = 120$

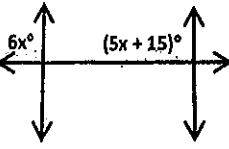
$x = 20$

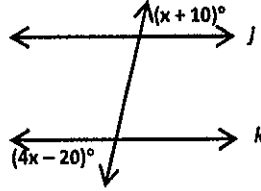


Find the value of x that makes $l \parallel k$.

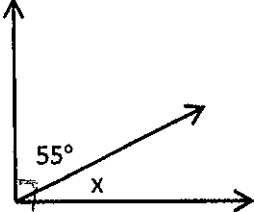
13.  Alternate interior
 $3x + 10 = 5x - 10$
 $20 = 2x$
 $10 = x$

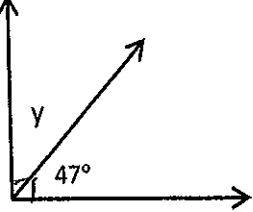
14.  Vertical angles
 $3x = 75$
 $x = 25$

15.  Corresponding angles
 $5x + 15 = 6x$
 $15 = x$

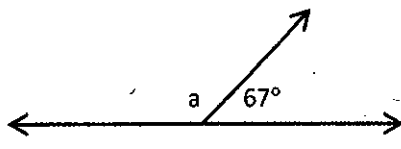
16.  Alternate exterior
 $x + 10 = 4x - 20$
 $30 = 3x$
 $10 = x$

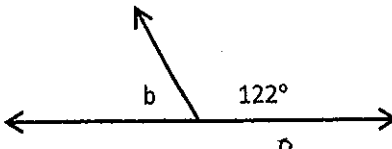
Determine the missing angles. Adjacent Complementary

17.  35°

18.  43°

Adjacent Supplementary

19.  113°

20.  58°