

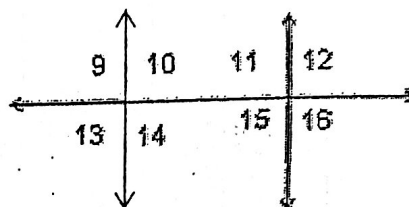
Worksheet #3 (Parallel Lines Cut by a Transversal)

Name: _____ Date: _____ Period: _____

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

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



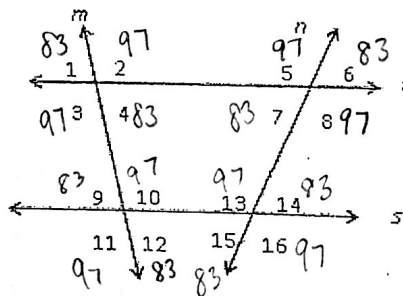
1. C $\angle 9$ & $\angle 16$ 5. B $\angle 9$ & $\angle 11$
 2. E $\angle 15$ & $\angle 11$ 6. E $\angle 9$ & $\angle 15$
 3. A $\angle 10$ & $\angle 15$ 7. E $\angle 13$ & $\angle 14$
 4. D $\angle 12$ & $\angle 15$ 8. A $\angle 14$ & $\angle 11$

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

$m\angle 3 = \underline{97^\circ}$ $m\angle 5 = \underline{97}$

$m\angle 10 = \underline{97}$ $m\angle 7 = \underline{83}$

$m\angle 9 = \underline{83}$ $m\angle 16 = \underline{97}$



Find the value of x given that s // t

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

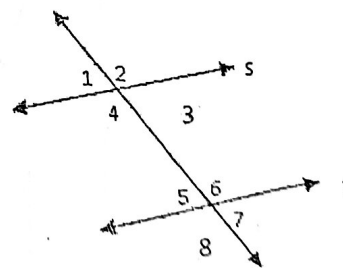
$4x + 57 = 77$
 $4x = 20$
 $x = 5$

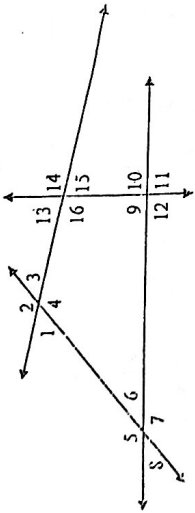
11. $m\angle 3 = 5x + 13$, $m\angle 5 = 53^\circ$

$5x + 13 = 53$
 $5x = 40$
 $x = 8$

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

$6x - 5 = 115$
 $6x = 120$
 $x = 20$





Refer to the above figure and identify the special angle pair name.

- 1) $\angle 3$ and $\angle 13$ Corresponding Interior
- 2) $\angle 8$ and $\angle 10$ Alternate Exterior
- 3) $\angle 11$ and $\angle 15$ Corresponding
- 4) $\angle 8$ and $\angle 6$ Vertical
- 5) $\angle 1$ and $\angle 6$ Alternate Interior
- 6) $\angle 6$ and $\angle 10$ Corresponding
- 7) $\angle 14$ and $\angle 15$ Supplementary

8) $m\angle 1 = 3x - 17^\circ$

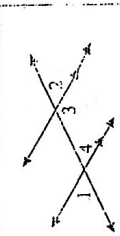
$m\angle 2 = x + 1^\circ$

$x = 9$

9) $m\angle 3 = 20h + 11^\circ$

$m\angle 4 = 8k + 1^\circ$

$k = 6$



$5x - 17 = x + 1$

$4x = 18$

$x = 9$

$20h + 11 + 8k + 1 = 180$

$28k + 12 = 180$

$28k = 168$

$k = 6$

10) $m\angle 1 = 95^\circ + 7h$

$m\angle 2 = 55^\circ - b$

$h = 5$

11) $m\angle 3 = 5k + 12^\circ$

$m\angle 4 = 7k - 16^\circ$

$k = 14$

$95 + 7h + 55 - b = 180$

$6h + 150 = 180$

$6h = 30$

$h = 5$

$5k + 12 = 7k - 16$

$28 = 2k$

$14 = k$

12) $m\angle 1 = 7y + 16$

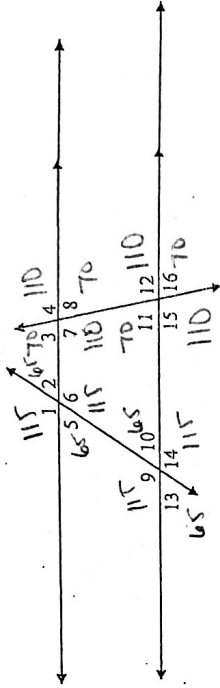
$m\angle 2 = 2x$

$m\angle 3 = 4x - 30$

$x = 15$

$y = 2$

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



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

13. $m\angle 9 = 115$	14. $m\angle 4 = 110$
15. $m\angle 10 = 65$	16. $m\angle 11 = 70$
17. $m\angle 8 = 70$	18. $m\angle 5 = 65$
19. $m\angle 3 = 70$	20. $m\angle 14 = 115$

Refer to the above figure and identify the special angle pair name.

- 21) $\angle 7$ and $\angle 2$ Alternate Interior
- 22) $\angle 6$ and $\angle 14$ Corresponding
- 23) $\angle 13$ and $\angle 12$ Alternate Exterior
- 24) $\angle 7$ and $\angle 11$ Consecutive Interior
- 25) $\angle 4$ and $\angle 8$ Supplementary