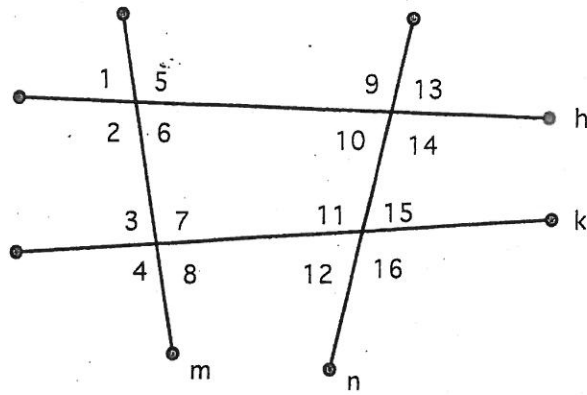


#1-8, Name the relationship that exists between the listed angles. If none exists right "None".

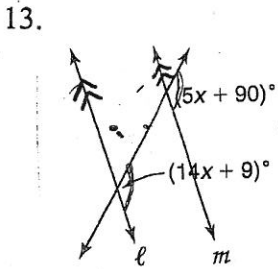
1. $\angle 1$ and $\angle 8$ alt. ext.
2. $\angle 9$ and $\angle 10$ linear pair
3. $\angle 7$ and $\angle 15$ corr.
4. $\angle 2$ and $\angle 3$ SSI
5. $\angle 6$ and $\angle 11$ none
6. $\angle 10$ and $\angle 13$ vertical angles
7. $\angle 6$ and $\angle 9$ alt. int.
8. $\angle 13$ and $\angle 11$ none.



#9-12, Name the transversal for the problem named from above.

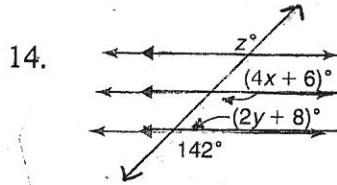
9. #3 K 10. #1 m 11. #7 h 12. #4 m

13-15, Solve for x, y and z.



$$5x + 90 = 14x + 9$$

$$x = 13$$



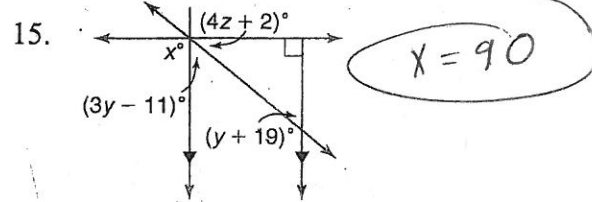
$$4x + 6 = 142$$

$$x = 34$$

$$2y + 8 + 142 = 180$$

$$y = 15$$

$$z = 142$$



$$x = 90$$

$$3y - 11 = y + 19$$

$$y = 15$$

$$3(15) - 11 + 4z + 2 = 90$$

$$z = 13$$

#16-17, Refer to the figure at right.

16. If $m\angle 4 = 2x - 25$ and $m\angle 8 = x + 26$, find $m\angle 2$. Explain your reasoning.

$$2x - 25 = x + 26$$

$$x = 51$$

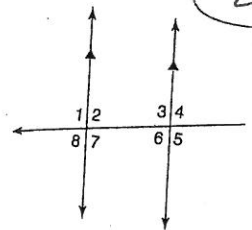
$$\angle 2 = 77^\circ$$

17. If $m\angle 6 = 2x + 43$ and $m\angle 7 = 5x + 11$, find $m\angle 5$. Explain your reasoning.

$$2x + 43 + 5x + 11 = 180$$

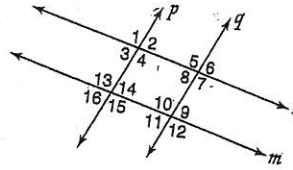
$$x = 18$$

$$\angle 5 = 101^\circ$$



#18-22, Given the following information determine which lines, if any, are parallel and state your reason. *Hint: you're working backwards here, what word is necessary?*

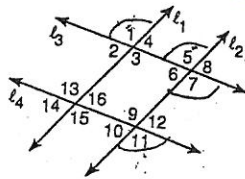
- 1. $\angle 1 = \angle 7$ $p \parallel q$, alt. ext. conv.
- 19. $\angle 16 = \angle 3$ $l \parallel m$, corresponding conv.
- 20. $m\angle 14 + m\angle 10 = 180$ $p \parallel q$; SSI converse
- 21. $\angle 4 = \angle 10$ none
- 22. $m\angle 8 + m\angle 10 = 180$ $l \parallel m$ SSI converse
- 23. $\angle 4 = \angle 13$ $l \parallel m$ alt. int. conv.



#24-27, Write a two-column proof for each. *Hint: If you're proving the lines are parallel you're working backwards.*

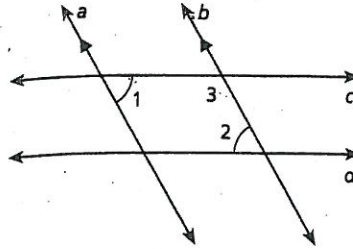
24. Given: $l_1 \parallel l_2$ and $l_3 \parallel l_4$
 Prove: $\angle 1 \cong \angle 11$

lots of possibilities



25.

Given: $a \parallel b$, $\angle 1 \cong \angle 2$
 Prove: $c \parallel d$



S	R
1. $\angle 1 = \angle 7$	1.
1. $l_1 \parallel l_2$	1. G
2. $l_3 \parallel l_4$	2. G
3. $\angle 1 = \angle 7$	3. Alt. Ext
4. $\angle 7 = \angle 11$	4. corresponding
5. $\angle 1 = \angle 11$	5. Sub(3,4) or Trans

S	R
1. $a \parallel b$	1. G
2. $\angle 1 = \angle 2$	2. G
3. $\angle 1 + \angle 3 = 180$	3. SSI
4. $\angle 2 + \angle 3 = 180$	4. Sub(2,3)
5. $c \parallel d$	5. SSI conv.