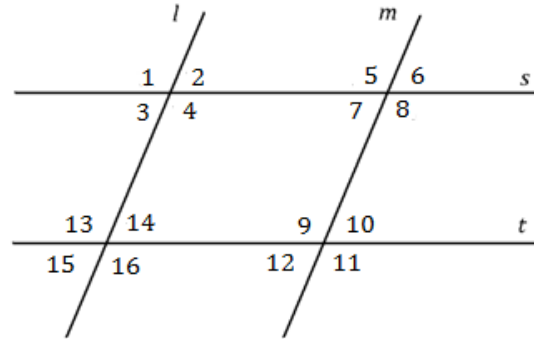Name _____Date _____ Period_____

DIRECTIONS: Use the following diagram for #1-11. For #1-8, write the letter…

**A** → if the angles are alternate interior angles,
C → if the angles are corresponding angles,
E → if the angles are alternate exterior angles,
S → if the angles are same-side interior angles,
N → if the angles are none of these

1. _____ ∡4 and ∡13

2. _____ ∡5 and ∡9

3. _____ ∡14 and ∡9

4. _____ ∡3 and ∡11

5. _____ ∡7 and ∡9

6. _____ ∡12 and ∡6

7. _____ ∡5 and ∡10

8. _____ ∡7 and ∡10

9. If $s \parallel t$ and $m\angle 11 = 130$, then $m\angle 5 =$ _____ .

10. If $l \parallel m$ and $m\angle 3 = w$, then $m\angle 13 =$ _____ .

11. If $l \parallel m$ and $s \parallel t$ and $m\angle 16 = 100$, then $m\angle 5 =$ _____ .

DIRECTIONS: Use the following diagram to answer #12. Remember to use the ∡ symbol.

12. List **all** angles supplementary to ∡1.

_____
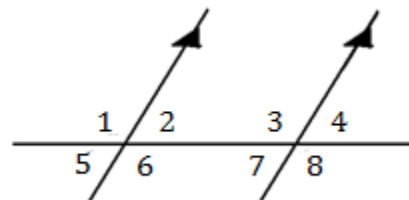
DIRECTIONS: For #13-20, make the statements true using **ALWAYS**, **SOMETIMES**, or **NEVER** (write the entire word).

13. If a line is parallel to plane *X* and also to plane *Y*, then plane *X* and plane *Y* are _____ parallel to each other.

14. Two lines that do not intersect are _____ parallel.

15. Two lines parallel to a third line are _____ parallel to each other.

16. Two nonintersecting lines are _____ skew.

17. If two parallel lines are cut by a transversal, then alternate interior angles are _____ congruent to each other.
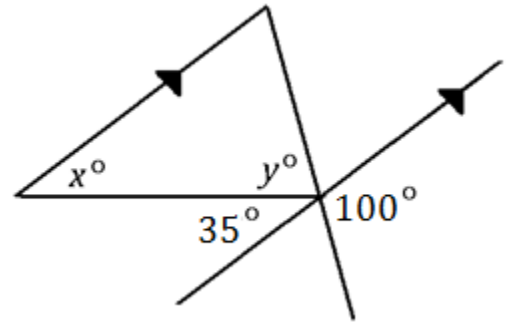
18. If two parallel lines are cut by a transversal, then same-side interior angles are _____ congruent to each other.

19. Two planes parallel to a third plane are _____ parallel to each other.
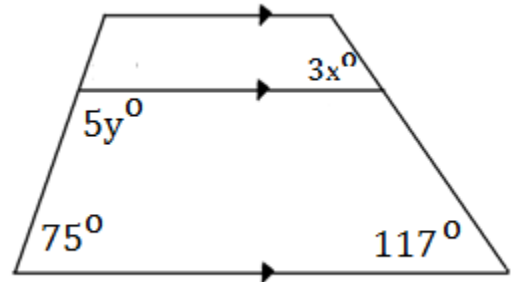
20. In a plane, two lines perpendicular to the same line are _____ parallel to each other.

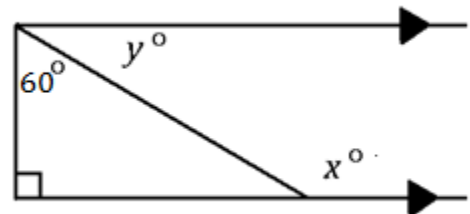<u>DIRECTIONS</u>: For # 21-24, solve for the given variables.

21. $x =$ _____ $y =$ _____

$x°$

$y°$

$35°$ $100°$

22. $x =$ _____ $y =$ _____

$3x°$

$5y°$

$75°$ $117°$

23. $x =$ _____ $y =$ _____

$y°$

$60°$

$x°$

24. $x =$ _____ $y =$ _____

$(7y - 4)°$ $(11x + 1)°$

$100°$
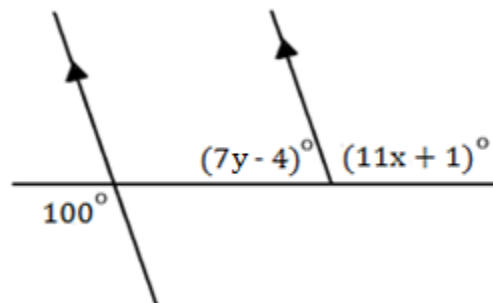
DIRECTIONS: For #25-30, supply the missing reasons for the proof.
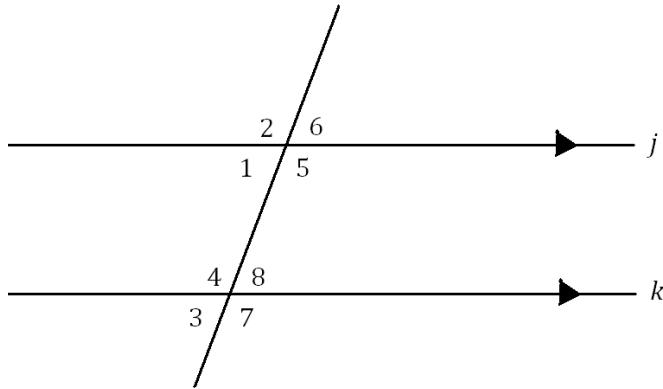
Given: $j \parallel k$

Prove: ∡1 and ∡7 are supp ∡s

---

25. $j \parallel k$

26. ∡1 and ∡4 are supp ∡s

27. $m\angle 1 + m\angle 4 = 180$

28. $m\angle 4 = m\angle 7$

29. $m\angle 1 + m\angle 7 = 180$

30. ∡1 and ∡7 are supp ∡s

25. _____

26. _____

27. _____

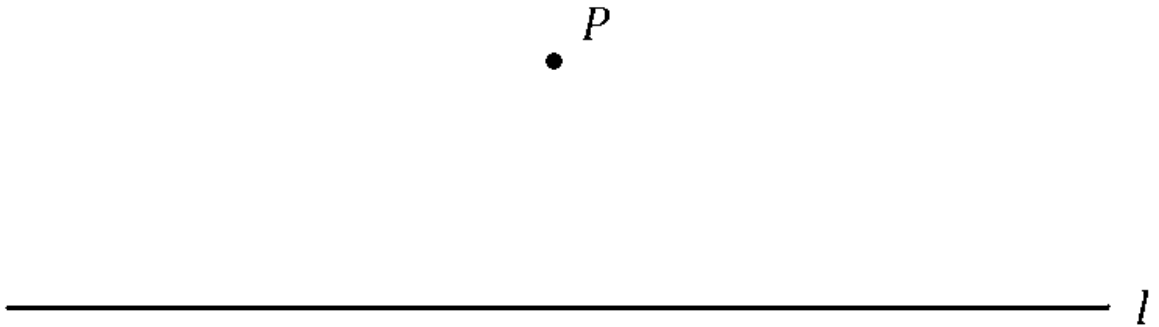**28.** _____

29. _____

30. _____

<u>DIRECTIONS</u>: Use the following segments, along with a straightedge and a compass, to construct a segment with the given length. Show all work and color your final segment (use a colored pencil, for example). In addition, you can label your final segment as $\overline{AB}$. (2 total pts)

x

y

31. $3x - y$

DIRECTIONS: Use a straightedge and a compass to complete the following constructions.   SHOW ALL WORK. (2 pts each- 4 total pts)

32. Construct a line that passes through the point P and is perpendicular to line l.

P

l

33. Construct a line that passes through the point P and is perpendicular to line l.

P

l