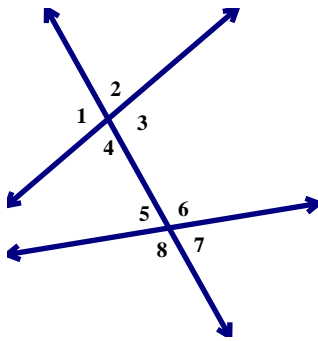Name:_____ Period:_____

HW 7-1: Parallel Lines & Transversals

Classify each pair of angles as *alternate interior*, *alternate exterior*, *corresponding*, *vertical*, or *neither*.
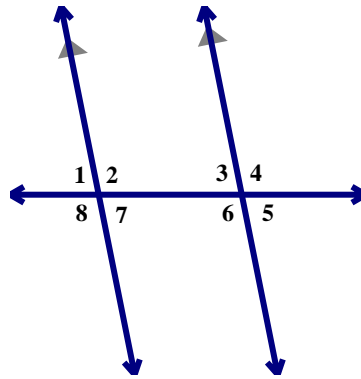
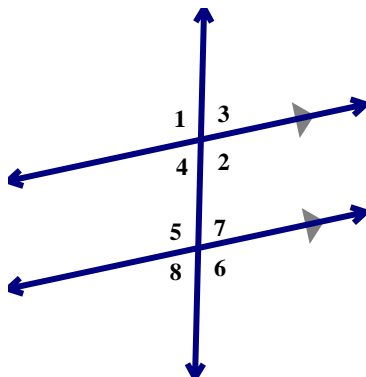|		
1. ∠1 & ∠5	**3.** ∠2 & ∠6	**5.** ∠2 & ∠5
2. ∠3 & ∠5	**4.** ∠4 & ∠8	**6.** ∠1 & ∠8
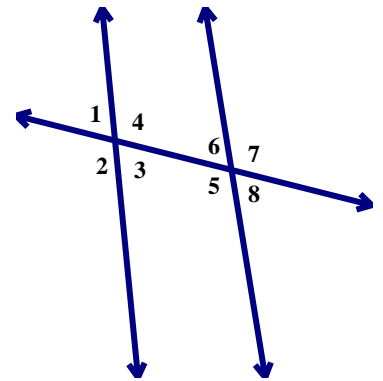
Classify each pair of angles as *alternate interior*, *alternate exterior*, *corresponding*, *vertical*, or *neither*.

7. ∠5 & ∠6	**10.** ∠8 & ∠3
8. ∠3 & ∠8	**11.** ∠4 & ∠6
9. ∠2 & ∠4	**12.** ∠6 & ∠3
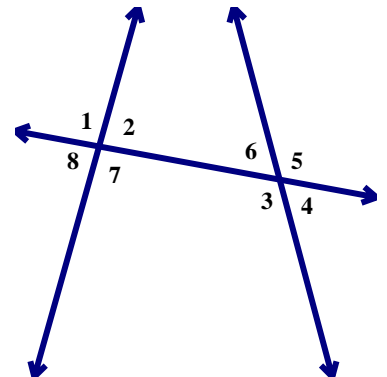
Find the indicated angle measure. (There may NOT be enough information to find the value.) Justify your answer by naming the angle relationship and angles used.
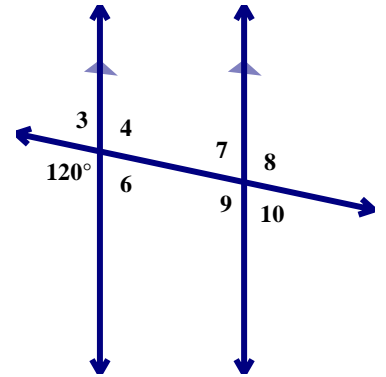
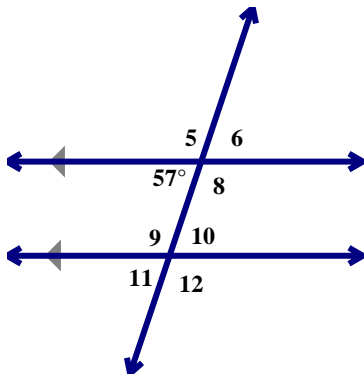13. $m\angle\,6$
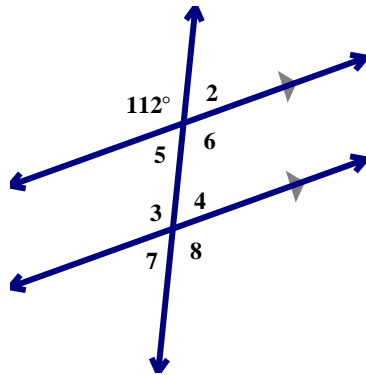
14. $m\angle\,3$

15. $m\angle\,4$

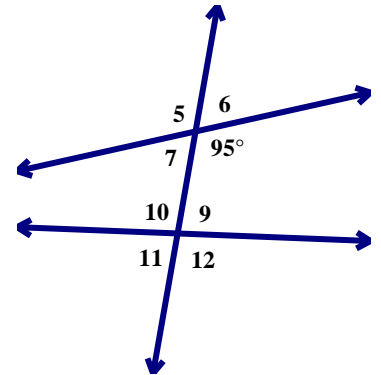16. $m\angle\,5$

17. $m\angle\,6$

18. $m\angle\,11$

19. $m\angle\,10$

20. $m\angle\,8$
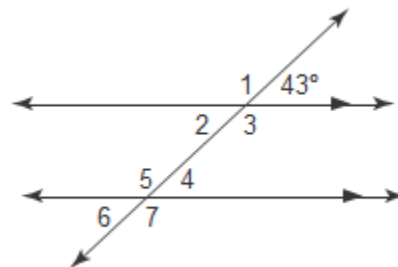
21. $m\angle\,4$

22. $m\angle\,7$

23. $m\angle\,5$

24. $m\angle\,12$

For problems 25 & 26, use the figure at the right.

25. List all the angles congruent to the given angle.

26. List all the angles congruent to $\angle\mathbf{5}$.

27. The symbol below is an equal sign with a slash through it. It is used to represent *not equal to* in math, as in $1 \neq 2$. If $m\angle 1 = 108°$, classify the relationship between $\angle 1$ and $\angle 2$. Then find $m\angle 2$. Assume the equal sign consists of parallel lines.
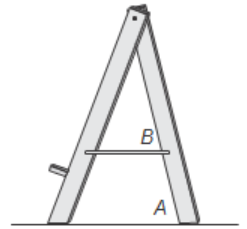

28. Arthur is designing a bridge for science class using parallel supports for the top and bottom beam. Find $m\angle 2$ if $m\angle 1 = 60°$
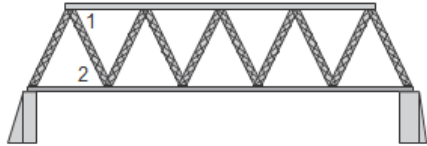
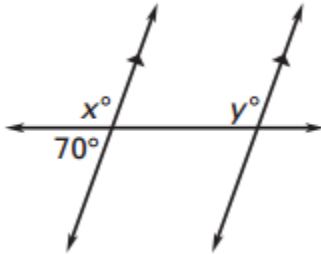**29.** Line *a* and line *b* are not parallel. Are angle 1 & angle 2 congruent?
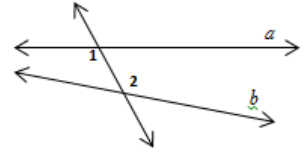
30. The drawing below shows the side view of a drawing easel. The brace is parallel to the ground. If $m\angle A$ is $82°$, what is the measure of $\angle B$?
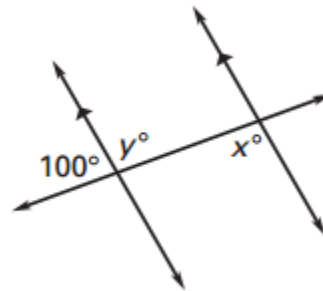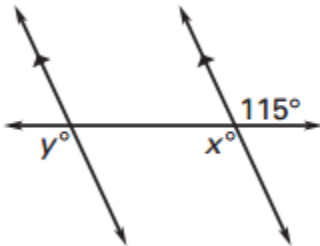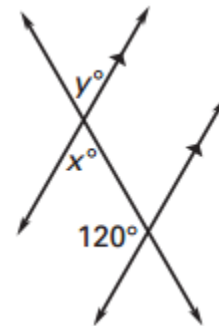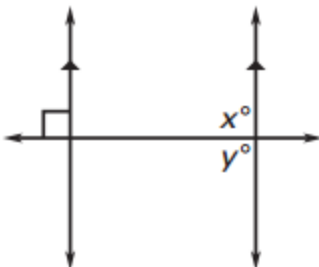

Find the values of *x* and *y*.

31.

32.

33.

34.

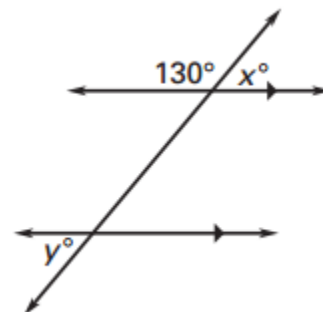**35.**

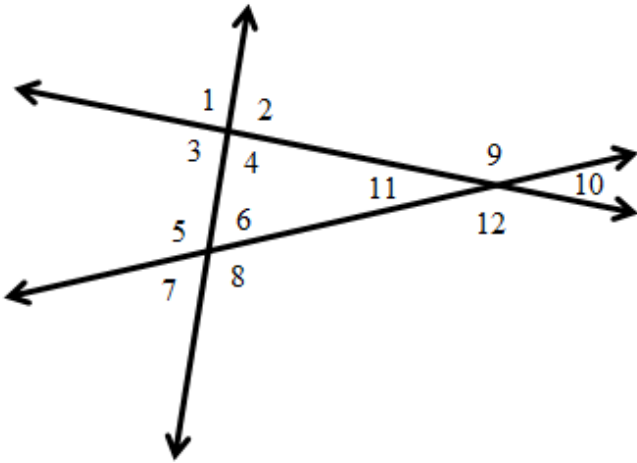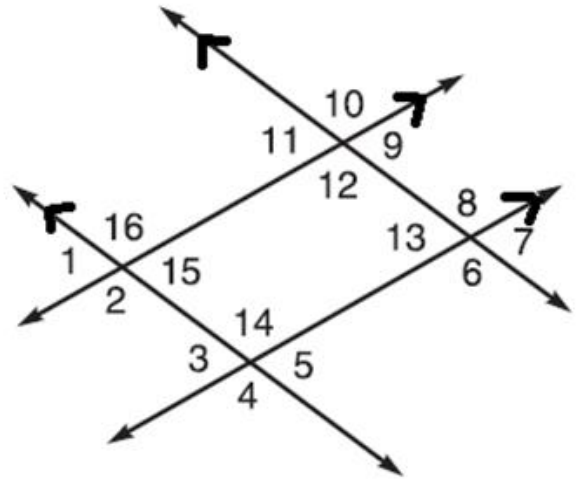**36.**

Classify each pair of angles as *alternate interior, alternate exterior, corresponding, vertical,* or *neither.*

37. ∠ 4 & ∠ 5

38. ∠ 7 & ∠ 9

39. ∠ 11 & ∠ 3

40. ∠ 1 & ∠ 5

41. ∠ 9 & ∠ 2

42. ∠ 7 & ∠ 13