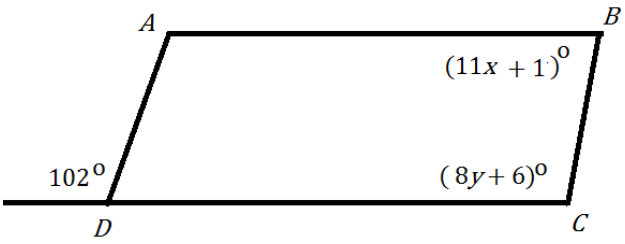
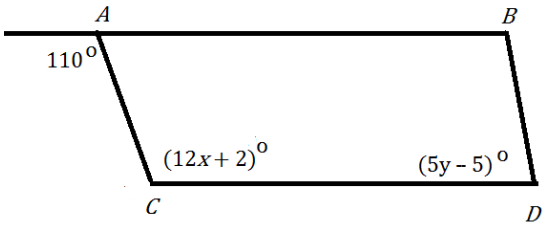
Name _____ Date _____ Period ____

DIRECTIONS: For #1-9, complete each statement with the best word: *ALWAYS*, *SOMETIMES*, or *NEVER*.

1. If a triangle is isosceles, then it is _____ scalene.
2. If a triangle is equilateral, then it is _____ isosceles.
3. A triangle can _____ have more than one right angle.
4. The measures of the exterior angles of a convex polygon _____ have a sum of 360°.
5. A triangle can _____ have one obtuse angle, one right angle, and one acute angle.
6. If ΔXYZ is equiangular, then $m\measuredangle Z$ is _____ 60°.
7. The measure of an exterior angle of a triangle _____ equals the sum of the measures of the remote interior angles.
8. The sum of the measures of the interior angles of a polygon is _____ equal to the sum of the measures of the exterior angles of the same polygon.
9. If a triangle is isosceles, it is _____ equilateral.

DIRECTIONS: For #10-11, find the values of x and y that make $\overline{AB} \parallel \overline{DC}$ **and** $\overline{AD} \parallel \overline{BC}$.

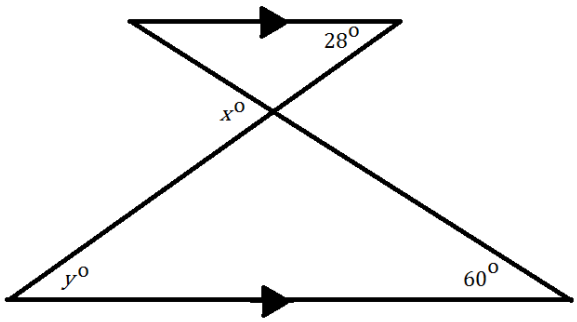




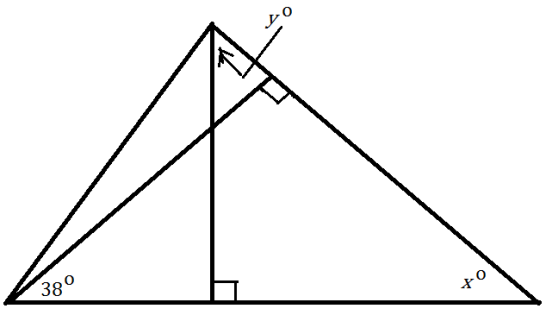
10. $x =$ _____ $y =$ _____

11. $x =$ _____ $y =$ _____

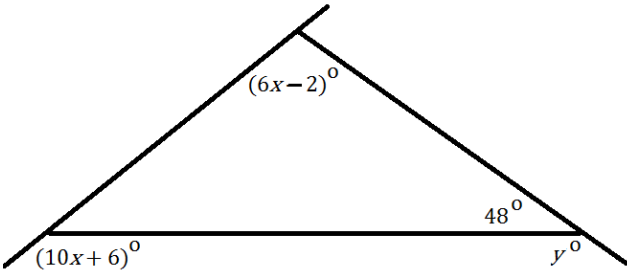
DIRECTIONS: For #12-15, find the values of x and y.



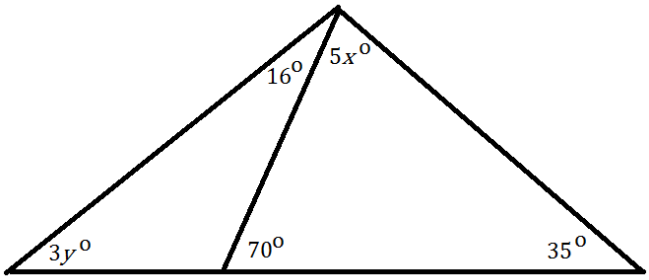
12. $x =$ _____ $y =$ _____



13. $x =$ _____ $y =$ _____



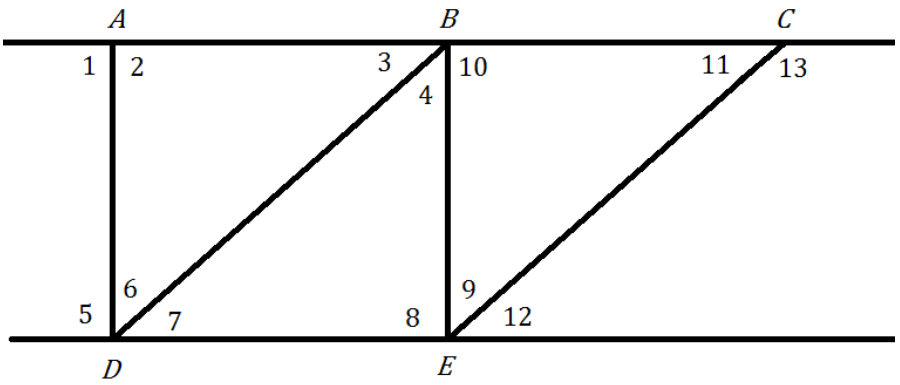
14. $x =$ _____ $y =$ _____



15. $x =$ _____ $y =$ _____

DIRECTIONS: Use the diagram for #16-21. Choose from the following to best complete each statement:

$\overline{AB} \parallel \overline{DE}$	$\overline{AD} \parallel \overline{BE}$	$\overline{DB} \parallel \overline{EC}$	**No conclusion is possible**



16. If $\measuredangle 4 \cong \measuredangle 9$, then _____ .

17. If $\measuredangle 11 \cong \measuredangle 12$, then _____ .

18. If $\measuredangle 3 \cong \measuredangle 7$, then _____ .

19. If $\measuredangle 5 \cong \measuredangle 8$, then _____ .

20. If $\overline{AC} \perp \overline{AD}$ and $\overline{AC} \perp \overline{BE}$, then _____ .

21. If$\measuredangle 6 \cong \measuredangle 3$, then _____ .

DIRECTIONS: For #22-23, make your drawings in the provided spaces.

22. Draw a convex pentagon

23. Draw a nonconvex hexagon

DIRECTIONS: For #24-28, answer the questions.

24. The sum of four of the five angles of a convex pentagon are 78°, 96°, 100°, and 114°. What is the measure of the fifth angle? [Show work]

_____

25. In hexagon $UVWXYZ$, $m\measuredangle U = 150°$, $m\measuredangle V = 120°$, and $m\measuredangle W = 160$. $\measuredangle X$ is twenty degrees less than three times $\measuredangle Z$, and $\measuredangle Y$ is thirty degrees more than three times $\measuredangle Z$. What are the measures of $\measuredangle X$, $\measuredangle Y$, and $\measuredangle Z$?

$m\measuredangle X$ = _____ $m\measuredangle Y$ = _____ $m\measuredangle Z$ = _____

26. Kari is looking at a regular polygon for which each exterior angle has a measure of 40°. How many sides does this polygon have? What is the measure of each interior angle of this polygon?

Number of sides _____ Measure of each interior angle _____

27. Shondra is looking at a regular polygon with fifteen sides. What is the measure of each interior angle of this polygon? What is the measure of each exterior angle of this polygon?

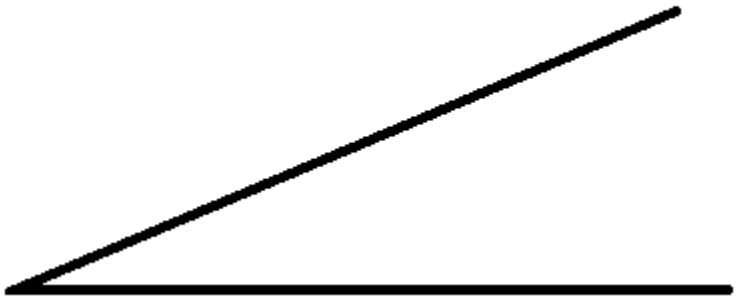
Measure of each interior angle _____ Measure of each exterior angle _____

28. Jose is looking at a regular polygon for which each interior angle has a measure of 170°. How many sides does this polygon have? What is the measure of each exterior angle?

Number of sides _____ Measure of each exterior angle _____

DIRECTIONS: For #29-30, use a compass and a straightedge to complete the constructions. Show all work.

29. Copy this angle



30. Draw a line parallel to line m that goes through the point P.