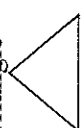
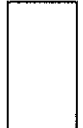
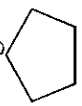
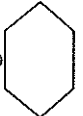

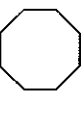




Angles in Polygons Exploration

| Name of polygon | Number of Sides | Number of Diagonals from a vertex | Number of triangles in polygon | Sum of interior angles | Measure or one interior angle (Regular Only) | Measure of one exterior angle (Regular Only) | Sum of exterior angles |
|--|-----------------|-----------------------------------|--------------------------------|------------------------|--|--|------------------------|
| Triangle  | | | | | | | |
| Quadrilateral  | | | | | | | |
| Pentagon  | | | | | | | |
| Hexagon  | | | | | | | |
| Heptagon  | | | | | | | |
| Octagon  | | | | | | | |
| Nonagon  | | | | | | | |
| Decagon  | | | | | | | |
| <i>n</i> -gon | | | | | | | |

Review for Test 3 - Chapter 6 – Polygons and Quadrilaterals

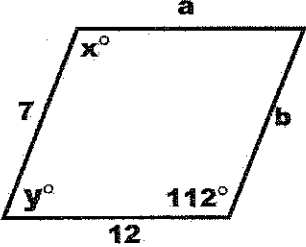
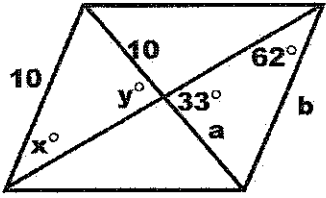
NAME _____ Date: _____ Per. _____

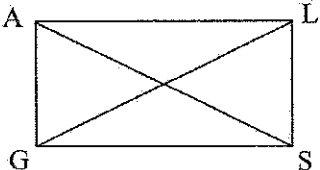
Write a definition for each of the following geometric terms using each figure's properties.

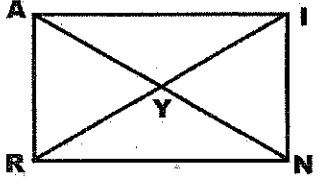
| | |
|---------------------|---|
| 1. Regular Polygon: | |
| 2. Concave Polygon: | |
| 3. Convex Polygon: | |
| 4. Trapezoid: | |
| 5. Parallelogram: | |
| 6. Rhombus: | |
| 7. Square: | |
| 8. Rectangle: | |
| 9. _____ | Find the sum of the measures of the interior angles of a regular convex 30-gon. |
| 10. _____ | Find the sum of the exterior angles of a regular 16-gon. |
| 11. _____ | Find the measure of one interior angle of a regular polygon with 15 sides. |
| 12. _____ | Find the number of sides of a regular polygon, if each interior angle has a measure of 172.5° |

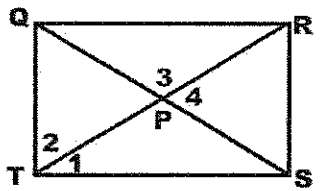
| | |
|-----------|---|
| 13. _____ | The sum of the measures of the interior angles of a regular polygon is 5400° . Find the number of sides of the polygon. |
| 14. _____ | Find the measure of one exterior angle of a regular polygon with 14 sides. |
| 15. _____ | Find the number of sides of a regular polygon if each exterior angle has a measure of 6° . |

In exercises 16 – 17, each quadrilateral is a parallelogram. Find the indicated measures.

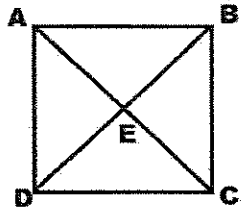
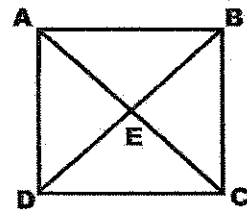
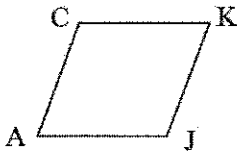
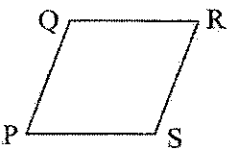
| | |
|--|---|
| 16. $a =$ _____ $b =$ _____ $x =$ _____ $y =$ _____ |  |
| 17. $a =$ _____ $b =$ _____ $x =$ _____ $y =$ _____ |  |

| | |
|-----------|---|
| 18. _____ | <p>Rectangle GALS has diagonals \overline{GL} and \overline{AS}. If $GL = 3a + 6$ and $AS = 5a - 18$, then $a = ?$</p>  |
|-----------|---|

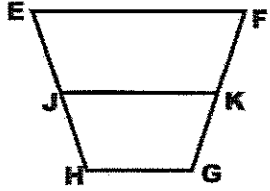
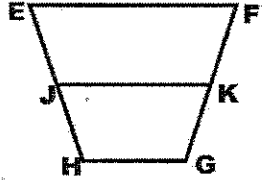
| | |
|-----------|--|
| 19. _____ | <p>In rectangle RAIN below, $YR = 3x$ and $NY = 18$, find 'x'.</p>  |
|-----------|--|

| | | |
|-----------|---|---|
| 20. _____ | $m\angle 1 = 55^\circ$, find $m\angle 2$ in rectangle TQRS |  |
|-----------|---|---|

Use square ABCD and the given information to find each value.

| | | |
|-----------|---|---|
| 21. _____ | If $m\angle AEB = (3x)^\circ$, find 'x'. |  |
| 22. _____ | If $AB = 2x + 4$ and $CD = 3x - 5$, find BC. |  |
| 23. _____ | <i>ACKJ</i> is a rhombus . $AC = 6y + 4$, $CK = 5y + 8$, and $KJ = 3y + 16$. Find the value of 'y'. |  |
| 24. _____ | <i>PQRS</i> is a rhombus . $m\angle PQS = (3x + 10)^\circ$ and $m\angle SQR = (x + 40)^\circ$. Find the $m\angle QRS$. |  |

The diagram below shows a trapezoid and its midsegment. Complete each of the following.

| | | |
|-----------|--|---|
| 25. _____ | If $EH = FG$, and $m\angle E = 65^\circ$, then $m\angle G = ?$ and $m\angle GKJ = ?$ |  |
| 26. _____ | If $EF = 36$, $JK = 4x$, and $GH = 2x + 6$, find the value of 'x'. |  |