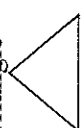
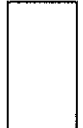
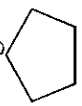
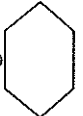

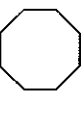




Angles in Polygons Exploration

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. _____

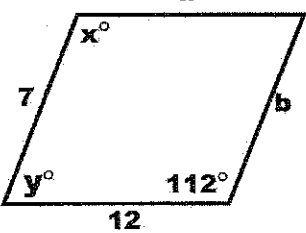
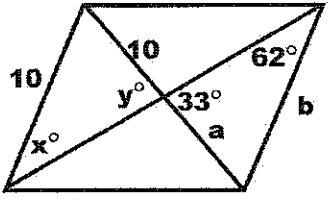
Write a definition for each of the following geometric terms using each figure's properties.

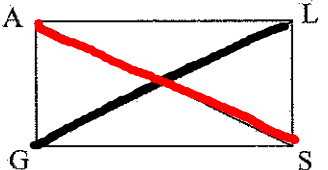
1. Regular Polygon:	All \angle s + Sides \cong (convex)
2. Concave Polygon:	At least 1 int. \angle that is super-obtuse
3. Convex Polygon:	No int \angle s > 180
4. Trapezoid:	Quad w/ exactly 1 set of \parallel sides
5. Parallelogram:	Quad w/ 2 sets of \parallel sides
6. Rhombus:	Quad. w 4 congruent sides
7. Square:	Quad w/ 4 \cong sides + \angle 's
8. Rectangle:	Quad w/ 4 \angle 's \cong
9. <u>5040</u>	Find the <u>sum</u> of the measures of the interior angles of a regular convex 30-gon. $(30-2) \cdot 180$
10. <u>360</u>	Find the sum of the exterior angles of a regular 16-gon.
11. <u>156</u>	Find the measure of one interior angle of a regular polygon with 15 sides. $(15-2) \cdot 180$ $(13 \cdot 180) / 15$
12. <u>48</u>	Find the number of sides of a regular polygon, if each interior angle has a measure of 172.5° $180 - 172.5 = 7.5$ $\frac{360}{7.5} = 48$

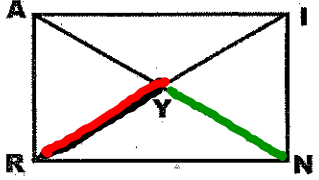
$$\frac{(n-2) \cdot 180}{n} = 172.5$$

13. <u>32</u>	The sum of the measures of the interior angles of a regular polygon is 5400° . Find the <i>number of sides</i> of the polygon. $(n-2)180 = 5400$
14. <u>25.7</u>	Find the measure of <i>one exterior angle</i> of a regular polygon with 14 sides. $360/14$
15. <u>60</u>	Find the <i>number of sides</i> of a regular polygon if each exterior angle has a measure of 6° . $360/6$

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

16. $a =$ <u>12</u> $b =$ <u>7</u> $x =$ <u>112</u> $y =$ <u>68</u>	
17. $a =$ <u>10</u> $b =$ <u>10</u> $x =$ <u>62°</u> $y =$ <u>33</u>	

18. <u>12</u>	<p><u>Rectangle</u> GALS has diagonals \overline{GL} and \overline{AS}. If $GL = 3a + 6$ and $AS = 5a - 18$, then $a = ?$</p> <p>$3a + 6 = 5a - 18$</p> 
---------------	---

19. <u>6</u>	<p>In rectangle RAIN below, $\underline{YR = 3x}$ and $\underline{NY = 18}$, find 'x'.</p> <p>$3x = 18$</p> 
--------------	--

20. 35 $m\angle 1 = 55^\circ$, find $m\angle 2$ in rectangle TQRS

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

21. 30 If $m\angle AEB = (3x)^\circ$, find 'x'.

22. 22 If $AB = 2x + 4$ and $CD = 3x - 5$, find BC.

$3x - 5 = 2x + 4$

23. y=4 ACKJ is a rhombus. $AC = 6y + 4$, $CK = 5y + 8$, and $KJ = 3y + 16$. Find the value of 'y'.

$6y + 4 = 5y + 8$

24. 70 PQRS is a rhombus. $m\angle PQS = (3x + 10)^\circ$ and $m\angle SQR = (x + 40)^\circ$. Find the $m\angle QRS$.

$3x + 10 = x + 40$
 $180 - 110 = 70$

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

25. 115 (65°) If $EH = FG$, and $m\angle E = 65^\circ$, then $m\angle G = ?$ and $m\angle GKJ = ?$

$180 - 65$

26. 7 If $EF = 36$, $JK = 4x$, and $GH = 2x + 6$, find the value of 'x'.

$\frac{36 + 2x + 6}{2} = 4x$