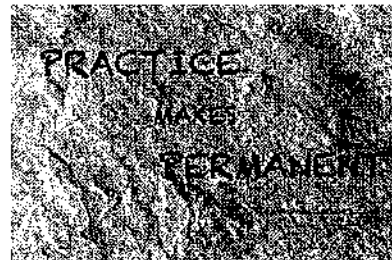
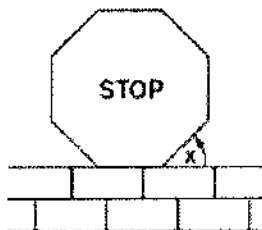


Name: key  
 Geometry CC Lesson 7-5

Date: \_\_\_\_\_  
 Polygons



- 1) A stop sign in the shape of a regular octagon is resting on a brick wall, as shown in the accompanying diagram.



What is the measure of angle  $x$ ?

$$\frac{360^\circ}{8} = 45^\circ$$

- 3) What is the sum, in degrees, of the measures of the interior angles of a pentagon?

$$(5-2)(180^\circ) = 540^\circ$$

- 5) Melissa is walking around the outside of a building that is in the shape of a regular polygon. She determines that the measure of one exterior angle of the building is  $60^\circ$ . How many sides does the building have?

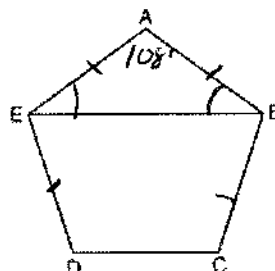
$$\frac{360^\circ}{60^\circ} = 6 \text{ sides}$$

- 7) The measures of five of the interior angles of a hexagon are  $150^\circ$ ,  $100^\circ$ ,  $80^\circ$ ,  $165^\circ$ , and  $150^\circ$ . What is the measure of the sixth interior angle?

$$(6-2)180^\circ = 720^\circ$$

$$\begin{array}{r} 720^\circ \\ - 645^\circ \\ \hline 75^\circ \end{array}$$

- 2) In the diagram below of regular pentagon  $ABCDE$ ,  $\overline{EB}$  is drawn.



What is the measure of  $\angle AEB$ ?

$$36^\circ$$

$$\frac{540}{5} = 108^\circ$$

$$\begin{array}{r} 180 \\ - 108 \\ \hline 72 \end{array}$$

$$\frac{72}{2} = 36^\circ$$

- 4) The sum of the interior angles of a regular polygon is  $720^\circ$ . How many sides does the polygon have?

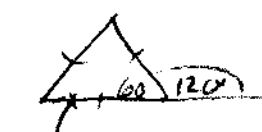
$$\frac{720^\circ}{180^\circ} = 4$$

$$4 + 2 = 6 \text{ sides}$$

- 6) A regular polygon has an exterior angle that measures  $45^\circ$ . How many sides does the polygon have?

$$\frac{360^\circ}{45^\circ} = 8 \text{ sides}$$

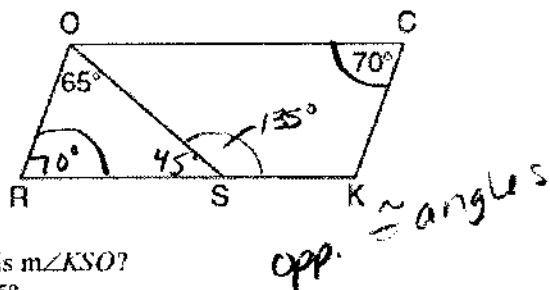
- 8) What is the measure of the largest exterior angle that any regular polygon can have?



smallest interior angle

$$120^\circ$$

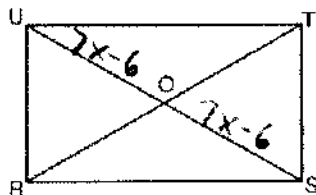
- 9) In the diagram below of parallelogram  $ROCK$ ,  $m\angle C$  is  $70^\circ$  and  $m\angle ROS$  is  $65^\circ$ .



What is  $m\angle KSO$ ?

- 1)  $45^\circ$
- 2)  $110^\circ$
- 3)  $115^\circ$
- 4)  $135^\circ$

- 11) In the diagram below of rectangle  $RSTU$ , diagonals  $RT$  and  $SU$  intersect at  $O$ .



If  $\overline{RT} = 6x + 4$  and  $\overline{SO} = 7x - 6$ , what is the length of  $\overline{US}$ ?

$$6x + 4 = 14x - 12$$

$$16 = 8x$$

$$X = 2$$

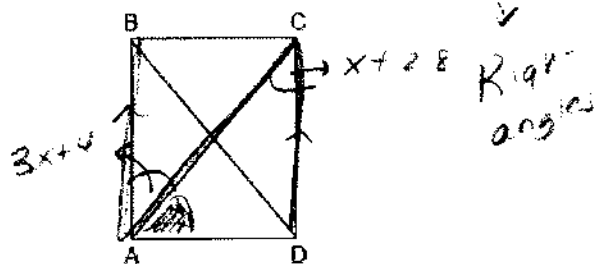
$$US = 7(2) - 6 \times 2 = \boxed{16}$$

$$US = 16$$

- 13) A set of five quadrilaterals consists of a square, a rhombus, a rectangle, an isosceles trapezoid, and a parallelogram. Lu selects one of these figures at random. What is the probability that both pairs of the figure's opposite sides are parallel?

- ✓ Square
- ✓ rhombus
- ✓ rectangle
- isosceles trapezoid
- ✓ parallelogram

- 10) In the accompanying diagram of rectangle  $ABCD$ ,  $m\angle BAC = 3x + 4$  and  $m\angle ACD = x + 28$ .



What is  $m\angle CAD$ ?

$$3x + 4 = x + 28$$

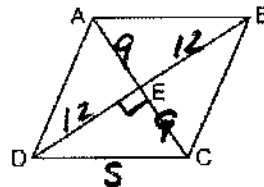
2x-24

$$3(12) + 4 = 40'$$

X-12

$$m\angle CAD = 90^\circ - 40^\circ = 50^\circ$$

- 12) In the diagram below of rhombus  $ABCD$ , the diagonals  $\overline{AC}$  and  $\overline{BD}$  intersect at  $E$ .



If  $AC = 18$  and  $BD = 24$ , what is the length of one side of rhombus  $ABCD$ ?

$$9^2 + 12^2 = 5^2$$

$$81 + 144 = 5^2$$

225. 52

15-5

or  $\{3, 4, 5\}$

X3 X3 X3

9.2, (15)