Name **Key** _____ Date _____ Pd ____

11.3 Areas of Polygons Shaded Regions CYU

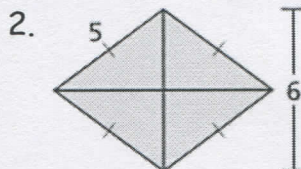| CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Area of kite or rhombus	1	2	
Vocabulary terms	4 - 6		
Area of a regular polygon & central ∠	7	8	
Area of shaded region of regular polygon			9 - 12

Find the area of the kite or rhombus. Show the set up.
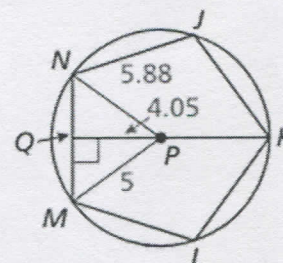
1.

19

38

$361 \, u^2$

2.

5

6
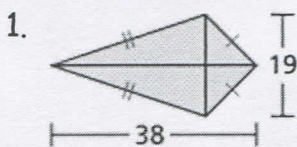
$24 u^2$

Use the diagram to answer the following questions.

3. Identify the center of polygon JKLMN. P

4. Identify a central angle of polygon JKLMN. ∠MPN

5. What is the radius of polygon JKLMN? $\frac{5u}{PM} = PM$

6. What is the apothem of polygon JKLMN? $\frac{QP}{QP} = 4.05u$

5.88
4.05
5

Find the measure of a central angle of a regular polygon with the given number of sides. Round answers to the nearest tenth of a degree, if necessary.
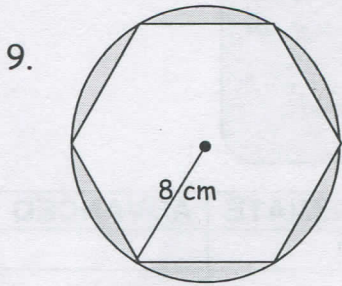
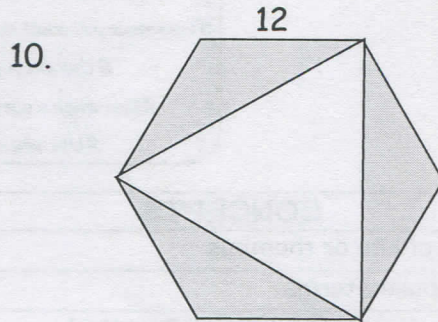7. 18 sides

$20°$

8. 7 sides

$51.4°$

Find the area of each shaded region. Show your set up. Give the exact and approximate to the thousandths when appropriate. Do not forget units.
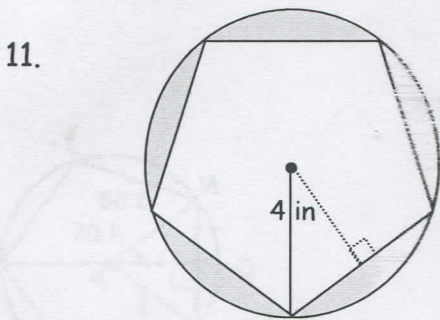
9.

8 cm

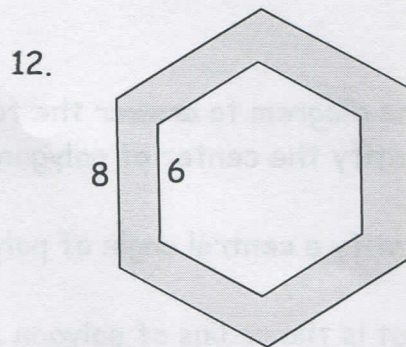$= 64\pi - 96\sqrt{3} \text{ cm}^2$
$\approx 34.785 \text{ cm}^2$

10.

12

$= 108\sqrt{3} \text{ u}^2$
$\approx 187.061 \text{ u}^2$

11.

4 in

$= 16\pi - 80(\sin 54)(\cos 54) \text{ in}^2$
$\approx 12.223 \text{ in}^2$

12.

8   6

$= 42\sqrt{3} \text{ u}^2$
$\approx 72.746 \text{ u}^2$

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*
Rate your mastery level!
How confident are you with the skills this CYU covered? Circle the score you would give yourself.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Basic   Intermediate   Advanced   Solved ALL!