

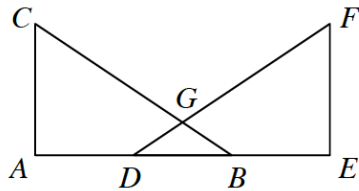
Name _____

Period ____ Date _____

Homework 8.2.2

1. A regular polygon has an interior angle measuring 140° . How many sides does it have? Determine the number of sides using two different strategies. Show all work.

2.



Examine the diagram at left. Given that $\triangle ABC \cong \triangle EDF$, is $\triangle DBG$ isosceles? Prove your answer using a flowchart. Hint: Think about our triangle congruence theorems.

3. Always a romantic, Marris decides to bake his girlfriend a cookie in the shape of a regular dodecagon (12-gon) for their 12-day anniversary.
- a. If the edge of the dodecagon is 6 cm, what is the area of the top of the cookie? Show the work that leads to your answer. Drawing a picture may help.
- b. His girlfriend decides to divide the cookie into 12 congruent pieces. After nine of the pieces have been eaten, what area of the cookie is left?

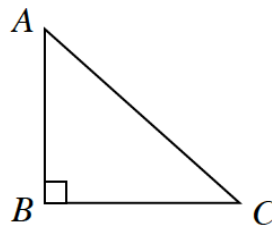
4. What is the area of a regular decagon if the length of each side is 18 units? Show the work that leads to your answer.

5. Simplify each of the following expressions. Be sure that your answer has no negative or fractional exponents.

a. $64^{1/3}$	b. $(4x^2y^5)^{-2}$	c. $(2x^2 \cdot y^{-3})(3x^{-1}y^5)$
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6. For the triangle below, write each of the following trigonometric ratios. The first one is done for you.

a. $\tan A = \frac{BC}{AB}$	b. $\sin A =$
c. $\cos A =$	d. $\tan C =$
e. $\sin C =$	f. $\cos C =$



7. Jamila solves the quadratic equation $x^2+3x-10=8$ (see her work below). When she checks her solutions, they do not make the equation true. However, Jamila cannot find her mistake. Explain her error and then solve the quadratic equation correctly.

$$\begin{aligned}
 x^2+3x-10 &= 8 \\
 (x+5)(x-2) &= 8 \\
 x+5=8 \text{ or } x-2=8 \\
 x=3 \text{ or } x=10
 \end{aligned}$$

Error:

Corrected Work: