# Lesson 11 Practice Problems

1. *Technology required.* A regular pentagon has side length 7 inches.

   a. What is the perimeter of the pentagon?

   b. What is the area of the pentagon?

2. *Technology required.* The expression $n \cdot \sin\left(\frac{360}{2n}\right)$ approximates $\pi$ by giving the perimeter of a regular polygon inscribed in a circle with radius 1.

   a. What does $n$ stand for in the expression?

   b. If there are 60 sides, what is the difference between the perimeter and $\pi$?

3. *Technology required.* A regular hexagon has side length 2 inches.

    a. What is the perimeter of the hexagon?

    b. What is the area of the hexagon?

(From Unit 4, Lesson 10.)

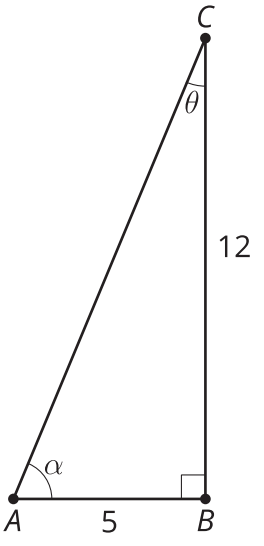
4. An airplane travels 125 miles horizontally during a decrease of 9 miles vertically.

    a. What is the angle of descent?

    b. What is the distance of the plane's path?

(From Unit 4, Lesson 10.)

5. Select **all** true statements.




A. $AC$ is $\sqrt{119}$ units

B. $AC$ is 13 units

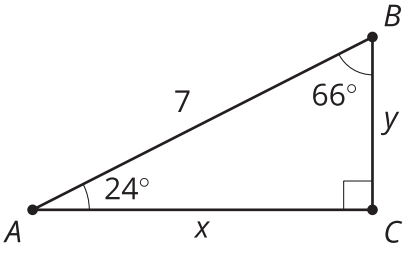
C. $\cos(\theta) = \frac{5}{12}$

D. $\sin(\alpha) = \frac{12}{13}$

E. $\theta = \arctan\left(\frac{5}{12}\right)$

(From Unit 4, Lesson 9.)

6. Write 2 equations using sine and 2 equations using cosine based on triangle $ABC$.




(From Unit 4, Lesson 8.)

7. An equilateral triangle has area of $36\sqrt{3}$ square units. What is the side length?

(From Unit 4, Lesson 3.)