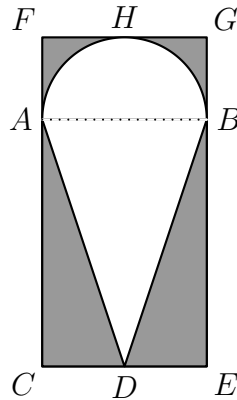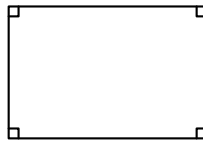# Practice 2 Geometry

1. _____ Mr. Mayfeld is designing a sign for his ice cream shop. The sign will be a shape consisting of a semicircle and an isosceles triangle that he will paint to look like a cone with a scoop of ice cream. He will cut the figure out of a rectangular piece of plywood measuring 2 ft by 4 ft, as shown. The shaded regions will be cut away. If $BE = 3BG$ and $\overline{AB}$ is parallel to $\overline{CE}$, what is the total area of the resulting figure? Express your answer as a decimal to the nearest tenth.
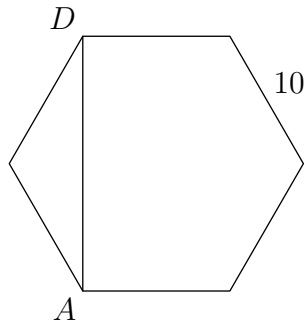
2. _____ The rectangle shown has a perimeter of 40 inches, and the length and width are both greater than 2 inches. If squares with dimensions $1'' \times 1''$ are removed from the corners as shown, determine the number of inches in the perimeter of the new polygon formed.
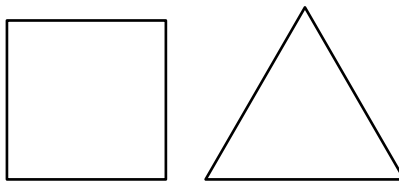
3. _____ A piece of wire 72 cm long is cut into two equal pieces and each is formed into a circle. What is the sum, in square centimeters, of the areas of these circles?
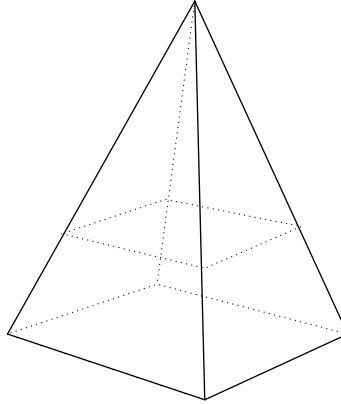
4. _____ Find the number of units in the length of diagonal DA of the regular hexagon shown. Express your answer in simplest radical form.

D

10

A

5. _____ An antacid tablet is in the shape of a right circular cylinder. The diameter of the base is $\frac{3}{4}$ inches and the tablet is $\frac{3}{16}$ inches thick. How many cubic inches are in the volume of the tablet? Express your answer as a common fraction in terms of π.

6. _____ Two similar right triangles have areas of 6 square inches and 150 square inches. The length of the hypotenuse of the smaller triangle is 5 inches. What is the sum of the lengths of the legs of the larger triangle?

7. _____ A square and an equilateral triangle have equal perimeters. The area of the triangle is $16\sqrt{3}$ square centimeters. How long, in centimeters, is a diagonal of the square? Express your answer in simplest radical form.

8. _____ A right square pyramid has a base with a perimeter of 36 cm and a height of 12 cm. At one-third of the distance up from the base to the apex, the pyramid is cut by a plane parallel to its base. What is the volume of the top pyramid?

9. _____ Two cylindrical cans have the same volume. The height of one can is triple the height of the other. If the radius of the narrower can is 12 units, how many units are in the length of the radius of the wider can? Express your answer in simplest radical form.

10. _____ Mrs. Read can knit one pair of children's mittens with a ball of yarn six inches in diameter. How many pairs of identical mittens can she knit with a ball of yarn twelve inches in diameter? Assume that the balls of yarn are rolled consistently.