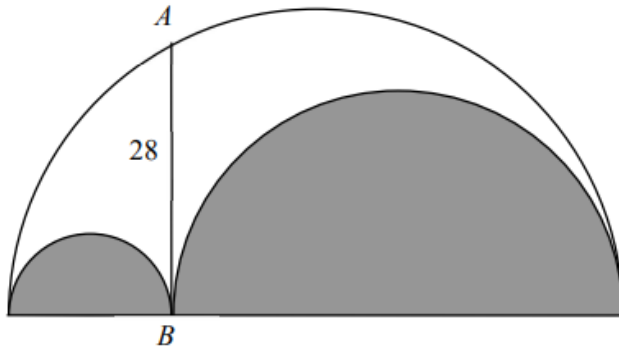


### Question 1

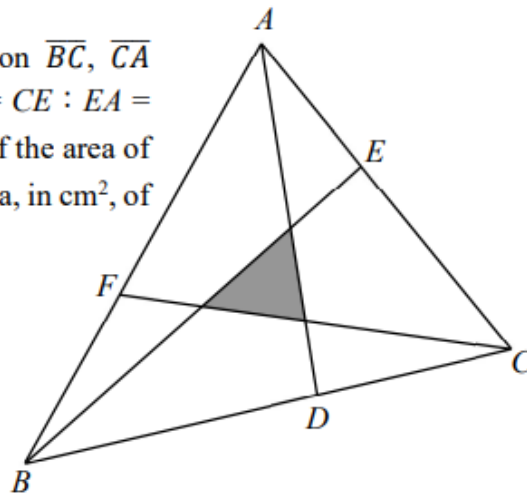
Three semicircles are drawn as in the diagram below. Let  $AB$  be a segment which is drawn from the diameter to the circumference of the largest semicircle and tangent to two shaded semicircles. What is the area, in  $\text{cm}^2$ , of the largest semicircle that is not covered by the smaller semicircles if the length of  $AB$  is 28 cm?

(Use  $\pi = \frac{22}{7}$ )



### Question 2

In the triangle  $ABC$ , points  $D, E$  and  $F$  are on  $\overline{BC}$ ,  $\overline{CA}$  and  $\overline{AB}$ , respectively, so that  $BD : DC = CE : EA = AF : FB = 3 : 2$ , as shown in the figure. If the area of the shaded area is  $100 \text{ cm}^2$ , what is the area, in  $\text{cm}^2$ , of the triangle  $ABC$ ?



### Question 3

Connect the midpoints and the “1/3-points” of the sides of an equilateral triangle, as shown in Figure 7.7, to create an interior hexagon (shaded). Show that the area of the hexagon is  $\frac{2}{5}$  the area of triangle.



FIGURE 7.7