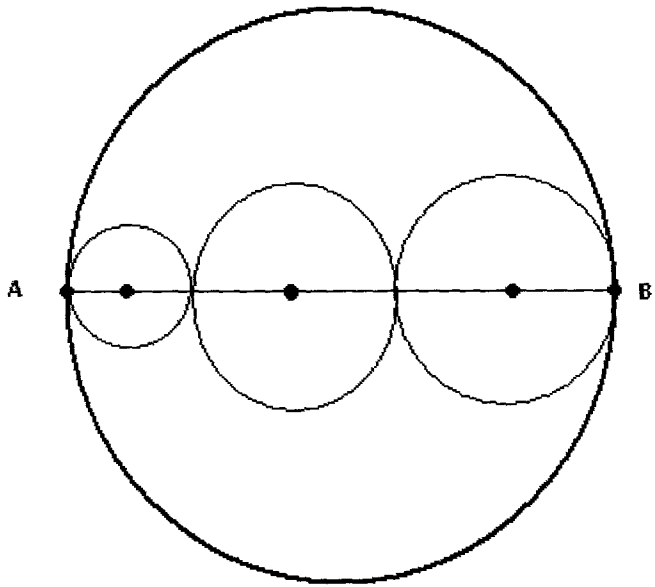
Math Worksheet: Geometry Problem (4)

1. 3 circles tangent to each other and to a larger circle, have their centers on the diameter AB of the larger circle. The larger circle has a radius of 3 cm, what is the sum of the perimeters of the 3 small circles?



let d_1, d_2 and d_3 be the diameters of the Smaller Circles.
The sum S of their perimeters is:

$$S = \pi d_1 + \pi d_2 + \pi d_3$$
$$= \pi (d_1 + d_2 + d_3)$$

Since the circles have their centers on the diameter of the large circle then

$$d_1 + d_2 + d_3 = 2 \times 3 = 6 \text{ cm}.$$

hence $S = 6\pi$ cm.