Eighteenth Set of Homework

Nikos Apostolakis

Due: Monday April 4

Please note: You should fully justify your answers.

Length on the circle

In the following questions give *exact* answers. In particular do not replace π by an approximation.

1. Find the length of the circumferance of a circe that has:
   (a) radius 1 ft.
   (b) diameter 1 m.
   (c) radius 4 cm.
   (d) radius $\sqrt{3}$
   (e) radius 3 inches.
   (f) diameter 8 cm.
   (g) diameter 7 inches.
2. In an circle of radius 1 find the length of an arc of
   (a) 30°
   (b) 45°
   (c) 60°
   (d) 90°
   (e) 180°
   (f) 270°
   (g) 120°
   (h) 300°
   (i) 10°
   (j) 2°
   (k) 36°
   (l) 5°
   (m) 50°
   (n) 225°
3. In a circle, an arc of 120° has legth 2π. What is the radius of the circle?
4. In a circle, an arc of 45° has length π. What is the diameter of the circle?
5. Repeat Question 2 for a circle of arbitrary radius R. Your answer should be given in terms of R.