

Name: \_\_\_\_\_

## CC Geometry Homework

## Arc Length of a Circle

- 1) In a circle whose radius is 30, what is the length of an arc (in terms of  $\pi$ ) which contains  $100^\circ$ ?
- 2) In a circle whose radius is 9, find the length of an arc (in terms of  $\pi$ ) which contains  $45^\circ$ ?
- 3) In a circle whose radius is 33, find the length of an arc, in terms of  $\pi$ , which contains  $240^\circ$ . [*Show all work.*]
- 4) Find the radius of a circle in which an arc that contains  $60^\circ$  has a length of  $3\pi$ . [*Show all work.*]
- 5) What is the radius of a circle in which an arc that contains  $144^\circ$  has a length of  $36\pi$ ?

1)  $16.7\pi$

2)  $4.5\pi$

3)  $99\pi$

WORK SHOWN:  $\ell = \left(\frac{n}{360}\right)2\pi r = \left(\frac{240}{360}\right)2\pi(33) = \left(\frac{2}{3}\right)66\pi = 99\pi$

4) 9

WORK SHOWN:  $\ell = \left(\frac{n}{360}\right)2\pi r, 3\pi = \left(\frac{60}{360}\right)2\pi r, 3 = \left(\frac{1}{6}\right)2r, 3 = \frac{2}{6}r, r = 9$

5) 45