**Flashcards: Circumference and Area of a Circle**

**Directions: Answer the following questions.**


1. Find the circumference and area of a circle with radius 6 in.

2. How much fence would you need to enclose a circular garden with diameter 9 yards?  How much grass would it take to cover the garden?

3. Find the radius and area of a circle with circumference 22π ft.

4. Find the radius and circumference of a circle with area 81π cm$^2$.

5. Find the circumference and area of the circle:  $(x - 3)^2 + (y + 2)^2 = 100$

6. Find the circumference and area of the circle with center at (-1, 1) and passes through the point (3, 4).




Answers:

1.  $C = 2\pi r = 2\pi(6) = 12\pi$
The circumference is 12π in or approximately 37.70 in.
A equals pi  times r squared equals pi times 6 squared equals 36 pi.
The area is 36π in$^2$ or approximately 113.10 in$^2$.

2.  The amount of fence would be the circumference.
$C = \pi d = \pi(9) = 9\pi$
The circumference is 9π yds or approximately 28.27 yds.
The amount of grass to cover it would be the area.
r equals one-half d equals one-half times 9 equals 4.5.  A equals pi times r squared equals pi times 4.5 squared equals 20.25 pi.
The area is 20.25π yd$^2$ or approximately 63.62 yd$^2$.

3. C equals 2 times pi times r.  22pi equals 2 pi times r.  Divide by 2 pi.  11 equals r.
The radius is 11 ft.
A equals pi times r squared equals pi times 11 squared equals 121 pi.
The area is 121π ft$^2$ or approximately 380.13 ft$^2$.

4. A equals pi times r squared.  81 pi equals pi times r squared.  81 equals r squared.  9 equals r.
The radius is 9 cm.
C equals 2 times pi times r equals 2 times pi times 9 equals 18 pi.
The circumference is 18π cm or approximately 56.55 cm.

5. r = 10
C equals 2 times pi times r equals 2 times pi times 10 equals 20 pi.
The circumference is 20π units or approximately 62.83 units.
A equals pi times r squared equals pi times 10 squared equals 100 pi.
The area is 100π units$^2$ or approximately 314.16 units$^2$.

6. r equals the square root of the quantity 3 minus negative 1 squared plus 4 minus 1 squared.  R equals the squared root of the quantity 4 squared plus 3 squared.  R equals the square root of the quantity 16 plus 9.  R equals the square root of 25.  R equals 5.

C equals 2 times pi times r equals 2 times pi times 5 equals 10 pi.

The circumference is 10π units or approximately 31.42 units.

A equals pi times r squared equals pi times 5 squared equals 25 pi.

The area is 25π units$^2$ or approximately 78.54 units$^2$.