

Example: Finding the Circumference and Area Given the Equation of a Circle**Problem:**

A circle is defined by the equation: the quantity x minus 3 squared plus the quantity y plus 2 squared equals 81. Find the circumference and area of this circle.

Solution:

Recall the general equation of a circle. The quantity x minus h squared plus the quantity y minus k squared equals r squared. We are not concerned with the center of the circle. The only information we need is the radius.

In this equation, r squared equals 81.

This means that r equals 9.

Now that we have the length of the radius, we can find the circumference using the formula C equals 2 times π times r .

C equals 2 times π times 9.

C equals 18 π .

The circumference is 18 π units.

We can also use the radius to calculate the area. A equals π times r squared.

A equals π times 9 squared.

A equals 81 π .

The area is 81 π square units.