

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

The area of a circle is 380.13 square meters. Find the radius, the diameter, and the circumference.

**Solution:**

The equation for area is  $A = \pi r^2$ . We are given that the area is 380.13.

Put in the value for  $A$  and solve for  $r$ .

Divide both sides by  $\pi$  to get  $121 = r^2$ . You should be using the  $\pi$  key on your calculator, rather than the rounded value 3.14. When you put 380.13 divided by  $\pi$  into the calculator, the result was not exactly 121. We round this off, since the decimal values were not significant.

Take the square root to get that 11 equals  $r$ . We only use the positive value when we take the square root, since  $r$  is a length.

The radius is 11 meters.

To find the diameter, we multiply the radius by 2.

$D = 2 \times 11$ .

$D = 22$ .

The diameter is 22 meters.

To find the circumference, use the formula  $C = 2\pi r$ .

For this circle, the radius is 11, so  $C = 2\pi \times 11$ .

$C = 22\pi$ . This answer could be multiplied out or left as  $22\pi$ .

The circumference is  $22\pi$  meters.