Chapter 1   Problem 77 [†]

Given

$D = 3.102 \ cm$

Solution

Find the area of the cirle.

The relationship between diameter and area for a circle is.

$$A = \pi \ r^2 = \pi \ \left(\frac{D}{2} \right)^2$$

$$A = (3.14159) \ \left(\frac{3.102 \ cm}{2} \right)^2 = 7.55741 \ cm^2$$

Notice that π is written out to more than four significant digits. The answer, however, must be to four significant digits. Therefore,

$$A = 7.557 \ cm^2$$

[†]Problem from University Physics by Ling, Sanny and Moebs (OpenStax)