Area and Circumference Notes

The radius of a circle is the distance from the center of a circle to any point on the circle. The radius is half of the diameter.

The distance across a circle through the center is called the diameter.

Circumference of a circle is simply the distance around the circle. The circumference is similar to perimeter of a shape such as a rectangle.

Circumference formula: \( C=2\pi r \) or \( \pi d \)

In this formula \( C \) stands for circumference, 2 is just the number 2, \( \pi \) is for purposes of this class equal to 3.14, and \( r \) is the radius of the circle.

The area of a circle is the number of square units inside that circle.

Area Formula: \( A= \pi r^2 \)

A is area, \( \pi \) is again “pi” or 3.14, \( r \) is radius and it is squared. Be careful to follow order of operations when using this formula. The formula doesn’t work if we multiply \( \pi \) times \( r \) first and then square that number. The squared sign applies ONLY to the radius.

\( \pi \) or “pi”= 3.14 for all purposes during this class.

Example 1:

\[
\begin{align*}
C &= 2\pi r \\
C &= 2(3.14)(4) \\
C &= 25.12 \text{ cm}
\end{align*}
\]

\[
\begin{align*}
A &= \pi r^2 \\
A &= (3.14)(16) \\
A &= 50.24 \text{ cm}^2
\end{align*}
\]

Example 2:

\[
\begin{align*}
C &= \pi d \\
C &= \pi (10) \\
C &= 31.4 \text{ cm}
\end{align*}
\]

\[
\begin{align*}
A &= \pi r^2 \\
A &= (3.14)(25) \\
A &= 78.5 \text{ cm}^2
\end{align*}
\]