

2.6 Problem Solving with Geometry

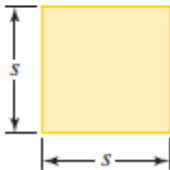

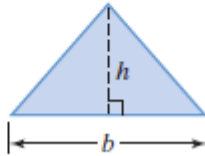
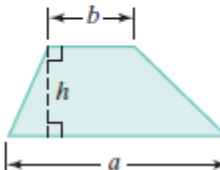
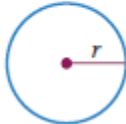
Definition 2.6.1 (Area)

the amount of 2-dimensional space that an object takes up; has square units: ft^2 , m^2 , yd^2 , etc.

Definition 2.6.2 (Perimeter)

the length of the exterior of an objects; has linear units; found by adding the sides of a polygon

Below are common formulas that will be used throughout this class.

<p>Square</p> $A = s^2$ $P = 4s$ 	<p>Rectangle</p> $A = lw$ $P = 2l + 2w$ 	<p>Triangle</p> $A = \frac{1}{2}bh$ 	<p>Trapezoid</p> $A = \frac{1}{2}h(a + b)$ 
<p>Circle</p> 	<p>Area</p> $A = \pi r^2$	<p>Circumference</p> $C = 2\pi r$	

Example 2.6.1

Find the height of a triangular sail that has an area of 24 square feet and a base of 4 feet.

Example 2.6.2

The diameter of a circular pool is 40 feet. Find the area and circumference rounded to the nearest foot.

Definition 2.6.3 (Volume)

the amount of 3-dimensional space that an object takes up; has cubic units (m^3 , ft^3 , yd^3 , etc.)

Common Volume Formulas

- Cube: $V = s^3$
- Rectangular Solid: $V = lwh$
- Cylinder: $V = \pi r^2 h$
- Sphere: $V = \frac{4}{3}\pi r^3$
- Cone: $V = \frac{1}{3}\pi r^2 h$

Example 2.6.3

A cylinder with a radius of 3 inches and a height of 5 inches has its height doubled. How many times greater is the new volume over the old one?