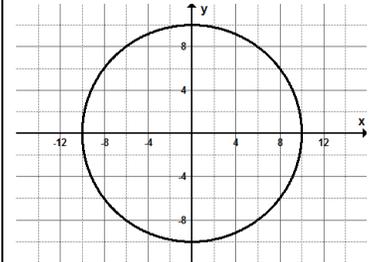


Geometry Ultimate Resource

Circles

The number pi (π) is an irrational number approximately equal to 3.14. This number is found in many places throughout math, but it is best known as the ratio of a circle's circumference to its diameter.

- A circle's center is the point in the very middle of it, equidistant from every point on the circle.
- A circle's diameter (d) is its width, the distance from one point on the circle to another point on the circle when you travel through the center.
- A circle's radius (r) is half its diameter. It is the distance from the center to any point on the circle.
- A circle's circumference ($C = \pi d$ or $C = 2\pi r$) is its perimeter, the distance around its outside.
- A circle's area ($A = \pi r^2$) is the amount of space inside the circle.



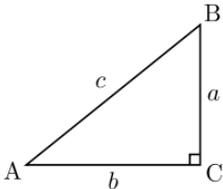
Angles & Lines

Type of Angle	Definition	Examples
Complementary Angles	Two angles that add up to ____ degrees <ul style="list-style-type: none"> • You can remember it by "C" for Corner 	
Supplementary Angles	Two angles that add up to ____ degrees <ul style="list-style-type: none"> • You can remember it by "S" for Straight Line 	

Vertical and Adjacent Angles

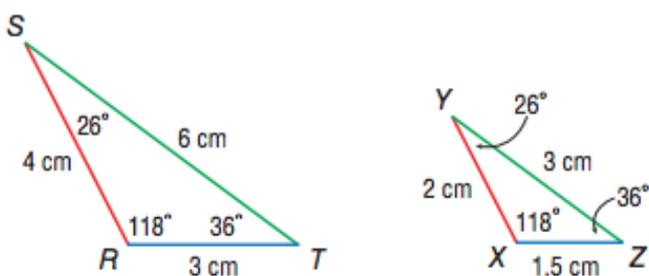
Vocab	Definition	Example
Adjacent Angles	Two angles are adjacent when they have a common side and a common vertex (corner point), and they don't overlap.	<p>Angle 1 and 2 are adjacent Angle 2 and 4 are vertical</p>
Vertical Angles	Vertical angles are the angles opposite each other when two lines cross.	

Triangle Rules

<p>Rules for the Sides of a Triangle</p> <ul style="list-style-type: none"> • The Triangle Inequality: the sum of two sides of a triangle must be greater than the third side 	
<p>Rule for the Angles of a Triangle</p> <ul style="list-style-type: none"> • The angles of a triangle must add up to 180 degrees 	<p>sides: $a + b > c$</p> <p>angles: $\angle A + \angle B + \angle C = 180^\circ$</p>

Similar Figures

Figures that have the same shape but not necessarily the same size are **similar figures**. In the figures below, triangle RST is similar to triangle XYZ. We write this as $\Delta RST \sim \Delta XYZ$.



The sides of similar figures that “match” are called **corresponding sides**.

The angles of similar figures that “match” are called **corresponding angles**.

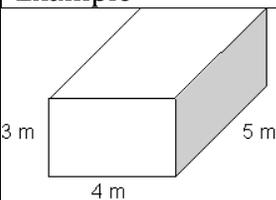
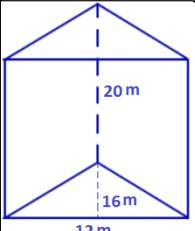
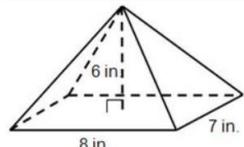
If two figures are similar, then:

- **Corresponding sides are proportional.**
- **Corresponding angles are congruent.**

If two figures are **congruent**, the two figures are

exactly the same in shape and in size.

Volume and Surface Area

Figure	Formulas	Example
Rectangular Prism	$V = l \cdot w \cdot h$ $SA = 2lw + 2lh + 2wh$ (Add the area of the 6 rectangular faces)	
Triangular Prism	$V = \text{base area} \cdot \text{height}$ (remember, the base of the triangle: $A = \frac{1}{2}bh$)	 $V = \frac{1}{2} \cdot 12 \cdot 16 \cdot 20$
Pyramid	$V = \frac{1}{3} \text{base area} \cdot \text{height}$ $SA: \text{Add the area of 4 triangles and base (Draw a picture)}$	

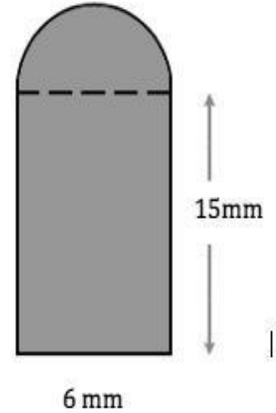
Composite Shapes

A **composite** or a **compound** shape is a shape that is made up of other shapes. Most of the shapes we see in the world around us are composite shapes!

Whenever you are trying to find the area of a composite shape, you just have to break the shape down into its basic shapes!

Steps:

- Figure out what basic shapes make up the composite shape
- Write down the formulas for the shapes inside the shapes
- Label any missing sides that you need to solve for the area
- Solve for the basic shapes (make sure your paper is split into sections)
- Add to find the total area



Tax: Will be add to your total amount

Tip: Will be added to your total amount

Discount: Will be subtracted from your total amount