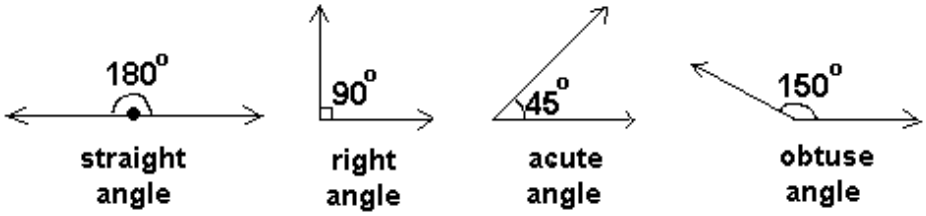
Angles

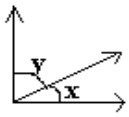
Applications involving angles and their measure come up often in the study of algebra, trigonometry, calculus, and applied sciences, and in life. The most common unit to measure an angle is the degree (°). Several angles and their corresponding degree measure are shown below.



- An angle that measures 180° is called a **straight angle**.
- An angle that measures 90° is a **right angle** (right angles are often marked at the vertex with a square or corner symbol).
- An angle that measures more than 0° and less than 90° is called an **acute angle**.
- An angles that measures more than 90° and less than 180° is called an **obtuse angle**.
- Two angles with the same measure are **equal angles** (or **congruent angles**).

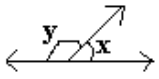
The symbol ∠ indicates an angle, and is used in front of the name of the angle. The measure of an angle is denoted by the letter "m". For example, the measure of ∠A is denoted m (∠A).

- Two angles are said to be **complementary** if their sum is **90°**.



m(∠ x) + m(∠ y) = 90°

- Two angles are said to be **supplementary** if their sum is **180°**



m(∠ x) + m(∠ y) = 180°

When two lines intersect, four angles are formed. In the figure below, ∠a and ∠b are said to be a pair of **vertical** angles, meaning they share a vertex. Another set of vertical angles is the pair ∠c and ∠d. An important property of vertical angles is that **the measures of two vertical angles are equal**. In the figure below, m(∠a) = m(∠b) and m(∠c) = m(∠d).