3-7-1 Geometry Vocabulary

It is important to know the vocabulary to be able to communicate and understand the questions you come across. Geometry is the study of the size, shape and positions of object in space. Plane geometry studies these objects in flat surfaces.

Terms | Diagram

A **point** is a position in space represented by a dot and usually named with a capital letter. A point can't be measured because it has no length and no height.

A **line**, represented on a diagram by a straight line with arrows on both ends, has no width and extends infinitely in both directions. It take two points to define a line, but an infinite number of points are on the line. It is named with two of the points on the line or with a lowercase italicized letter. $\overleftrightarrow{AB}$, $\overleftrightarrow{DA}$ and line k are the same in the diagram.

A **ray** is part of a line. It starts at one point and goes infinitely in one direction. $\overrightarrow{BD}$ starts at point B and goes through point D and continues forever in that direction. $\overrightarrow{DA}$ is not the same ray.

A **segment** is between two points. $\overline{AB}$ is the segment between point A and point B. Notice the part of ray $\overrightarrow{BD}$ that is the same as part of ray $\overrightarrow{DA}$ is segment $\overline{BD}$.

An **intersection** is where geometric objects share space. Two lines intersect at a point. Line k and line m intersect at point B. $\overline{BD}$ is the intersection of $\overrightarrow{DA}$ and $\overrightarrow{BD}$.

Two rays with a common starting point form an **angle**. The common point is called the **vertex**. An angle may be named by it's vertex, $\angle B$ when the vertex alone is not ambiguous. Three points can also designate an angle with the vertex as the middle point, $\angle ABC$. Angles might also be numbered, $\angle 1$.
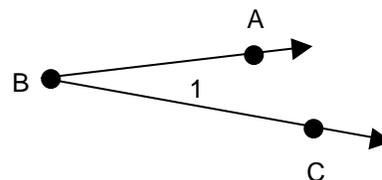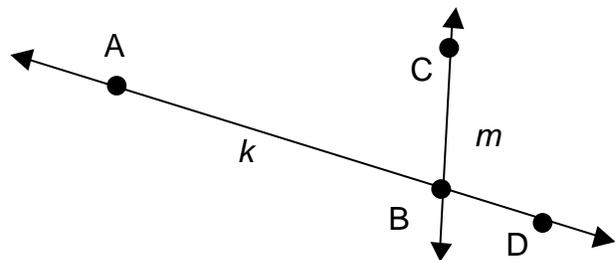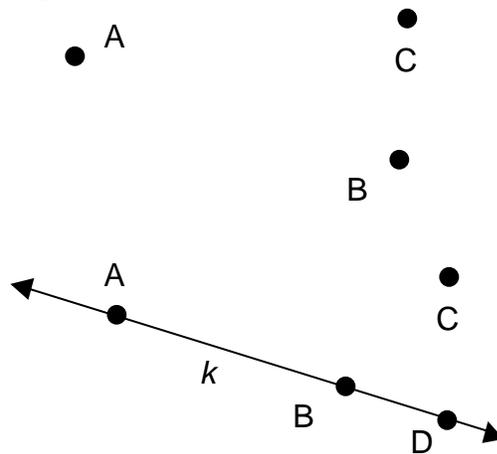
Perpendicular lines intersect at 90 degree angles. $\overleftrightarrow{CE} \perp \overleftrightarrow{BD}$ is read line CE is perpendicular to line BD.

Parallel lines don't intersect, even if they are extended much farther than shown in the diagram. Line k is parallel to line m but is not parallel to line n.
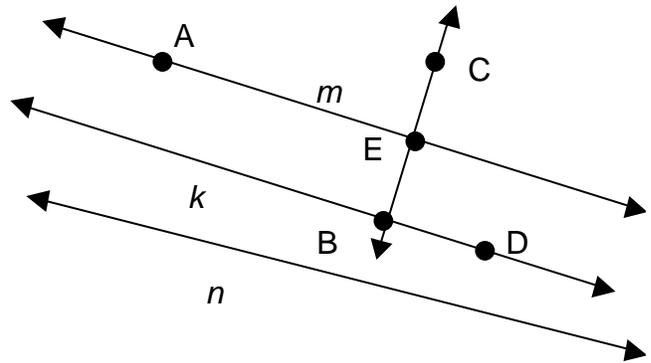
An **acute** angle is less than $90°$. $\angle DBE$ is acute. Think "a cute little angle" to remember the term.

An **obtuse** angle is greater than $90°$. $\angle CBD$ is obtuse. Think "obtuse angles are obese" to remember.
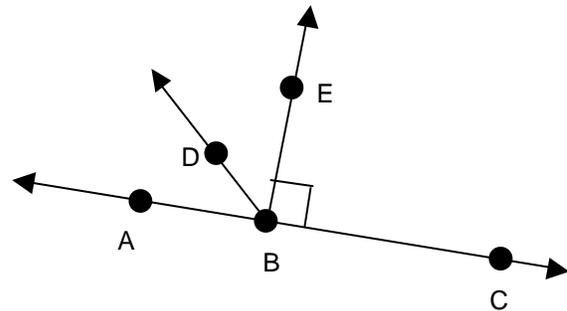
A **right** angle is $90°$. $\angle EBC$ and $\angle ABE$ are right angles. The little square at the vertex indicates the angle is $90°$.

Complementary angles add to $90°$. $\angle ABD$ and $\angle DBE$ are complementary angles.

Supplementary angles add to 180° $\angle ABD$ and $\angle DBC$ are supplementary angles.

Vertical angles are across the intersection of two lines from each other. $\angle 8$ and $\angle 5$ are vertical angles. Vertical angles are equal. There are two pairs of vertical angles in one intersection.

A **transversal** crosses a set of parallel lines. $\overleftrightarrow{CD}$ is a transversal to the parallel lines m and k. This grouping makes two sets of four equal angles. $m\angle 2 = m\angle 3 = m\angle 8 = m\angle 5$ and $m\angle 1 = m\angle 4 = m\angle 7 = m\angle 6$ The "m" stand for "the measure of".
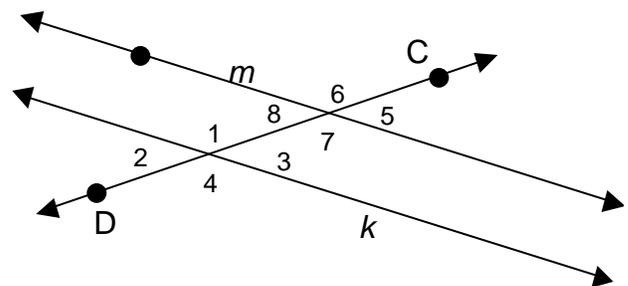
Alternate interior angles are equal and between the parallel lines and across the transversal from one another. $\angle 8$ and $\angle 3$ are one set of alternate interior angles.

Alternate exterior angles are equal and outside the parallel lines and across the transversal from one another. $\angle 4$ and $\angle 6$ are one set of alternate interior angles.

Corresponding angles are on the same side of the transversal and either both above each parallel line or both below. $\angle 4$ and $\angle 7$ are one set of corresponding angles.