Study Guide for Unit 2 Lessons 6 -8

Lesson 2.06
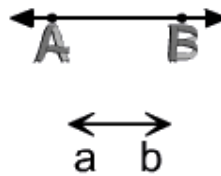
Terms:

point	a location in space	**P**	point P
line	a straight path with no end points	A B / a b	line A B
line segment	a part of a line with two end points	A B / a b	line segment AB
ray	a part of a line with one endpoint	C D / c d	ray C D
angle	formed by two rays with a common endpoint	A B C ∠ABC	angle A B C
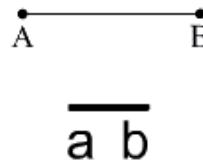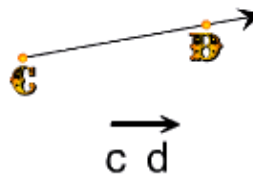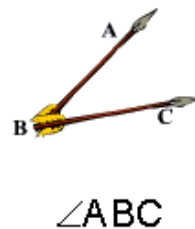
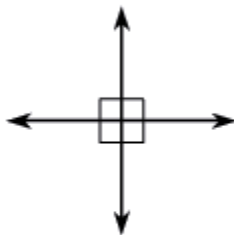| plane	a flat surface that extends without end in all directions		plane D T B

• D   • B   • T
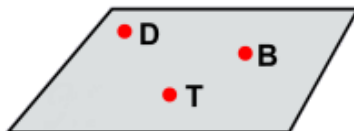
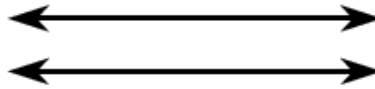Lines in a plane sometimes meet or intersect.
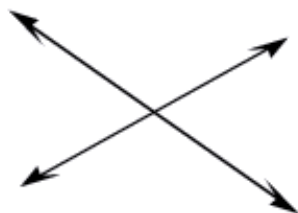
intersecting lines

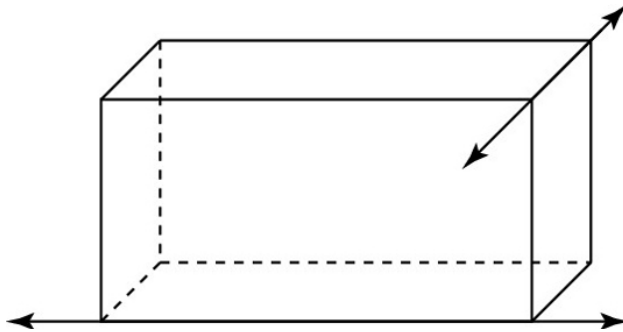Lines in a plane sometimes meet or intersect at right angles.

perpendicular lines

⊥

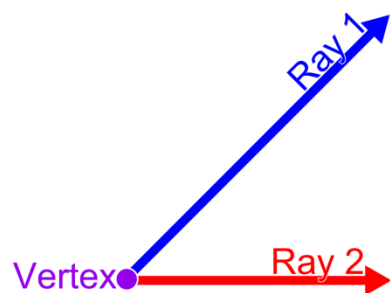If two lines in a plane never meet, they are always the same distance apart. These lines are called parallel.

parallel lines

||

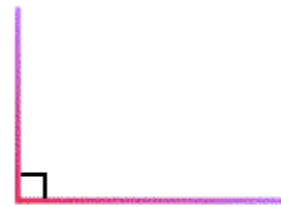Skew lines do not have intersections and are not parallel.

An angle is formed by the intersection of two rays. The vertex is the endpoint of the two rays that form an angle.
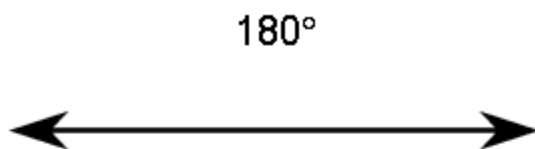
Ray 1

Ray 2

Vertex

An acute angle is less than (<) 90°.

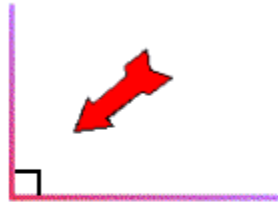A right angle equals 90°.

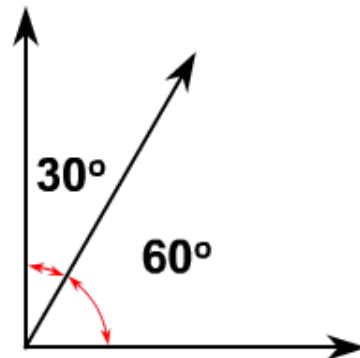An obtuse angle is greater than (>) 90° but less than (<) 180°.
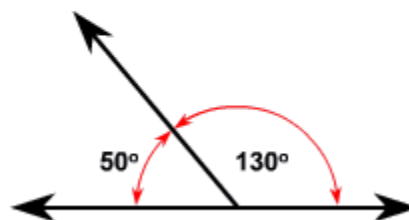
180°

A straight angle equals 180°.

"⌐" is a symbol for a right angle (90°).

If the sum of the measures of two angles is 90°, they are called complementary angles.

30°
60°

Two angles whose sum is 180° are called supplementary angles.

50°   130°

Type of Angle	Description
Acute Angle	an angle that is less than 90°
Right Angle	an angle that is 90° exactly
Obtuse Angle	an angle that is greater than 90° but less than 180°
Straight Angle	an angle that is 180° exactly
Reflex Angle	an angle that is greater than 180°

acute   right   obtuse   straight
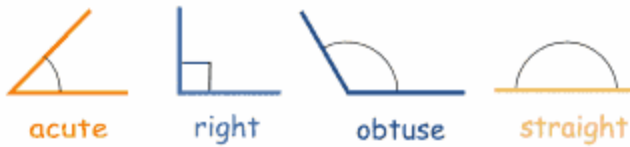
PRACTICE:

Refer to the figure.

1. Name a line that contains point A.

2. What is another name for line m?

3. Name a point not on $\overleftrightarrow{AC}$.

4. Name the intersection of $\overleftrightarrow{AC}$ and $\overleftrightarrow{DB}$.

5. Name a point not on line ℓ or line m.
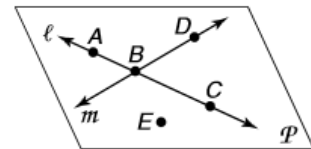
Classify each angle as acute, obtuse, *or* right.

1. ∠FBH
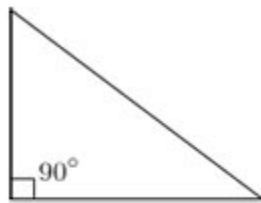
2. ∠CBD

3. ∠ABC

4. ∠ABG

5. ∠ABE

6. ∠EBH

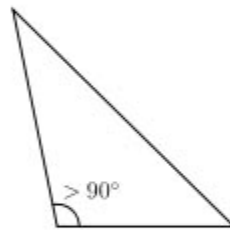7. ∠DBH

8. ∠FBG
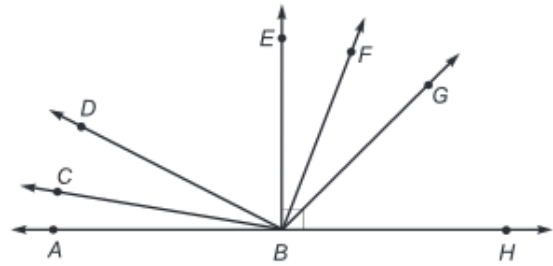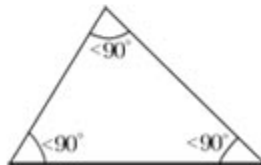
Lesson 2.07
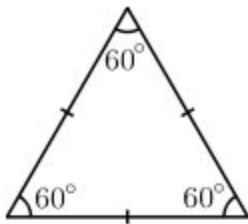
Equilateral triangle

Right angle triangle

Isosceles triangle
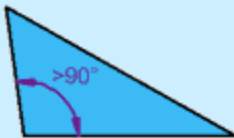

Obtuse triangle

Scalene triangle

Acute triangle
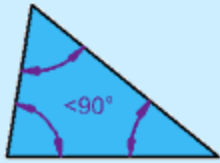
	Acute Triangle All angles are less than 90°
	Right Triangle Has a right angle (90°)
	Obtuse Triangle Has an angle more than 90°
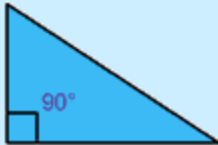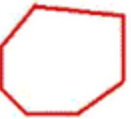
Type	Properties
Parallelogram	• Opposite sides are equal and parallel • Opposite angles are equal
Rectangle	• Opposite sides are equal and parallel • All angles are right angles (90°)
Square	• Opposite sides are parallel • All sides are equal • All angles are right angles (90°)
Rhombus	• Opposite sides are parallel • All sides are equal • Opposite angles are equal • Diagonals bisect each other at right angles (90°)
Trapezoid	• One pair of opposite sides is parallel
Kite	• Two pairs of adjacent sides are equal • One pair of opposite sides are equal • One diagonal bisects the other • Diagonals intersect at right angle (90°)

Number of sides	Figure	Name
3		Triangle
4		Quadrilateral
5		Pentagon
6		Hexagon
7		Heptagon
8		Octagon
9		Nonagon
10.		Decagon

Similar figures have the same shape, but not the same size.

Similar Triangles
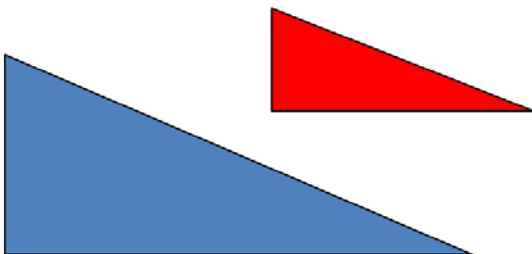
Congruent figures have the same shape **and** the same size

2.1 inches   2.1 inches

1 inch   1 inch

2.25 inches   2.25 inches

A figure is said to have symmetry if it can be folded along a line (sometimes imaginary) so that two congruent shapes are formed.
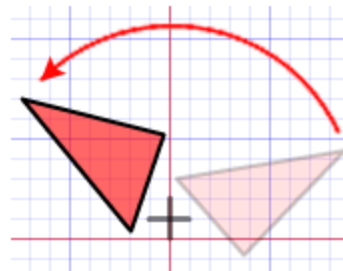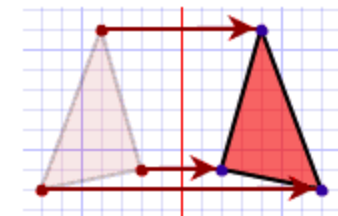
Some shapes have more than one line of symmetry.
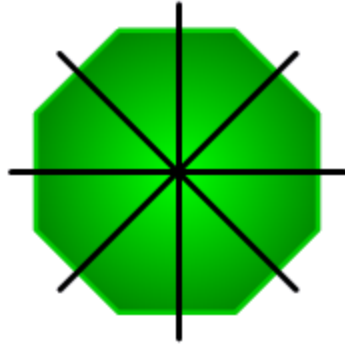
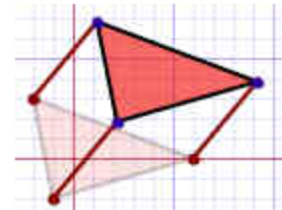These are Transformations:

Rotation   Turn!

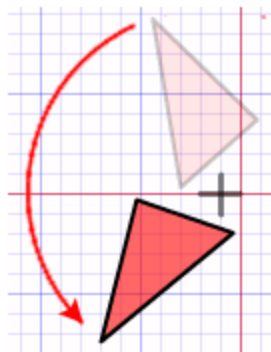**Reflection**   Flip!

Translation   Slide!

"Rotation" means turning around a center:

The **distance** from the center to any point on the shape stays the same.

Every point makes a **circle** around the center.

Here a triangle is rotated around the point marked with a "+"
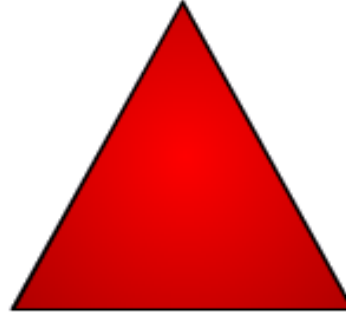
PRACTICE:

1. What motion is shown here?

Click on the correct answer.
(Points : 1)

○ turn
○ slide

2. Identify this figure.

Click on the correct answer.
(Points : 1)

○ scalene triangle
○ obtuse triangle
○ equilateral triangle

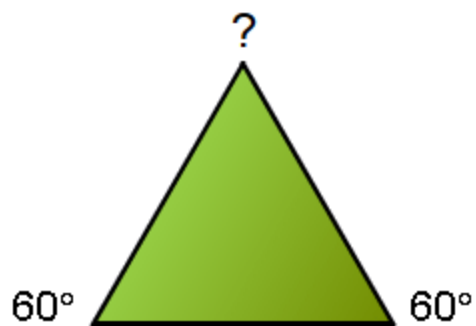3. Can a line of symmetry be drawn for this letter?

M

(Points : 1)

○ no
○ yes

4. Find the measure of the missing angle.

?

60°   60°

(Points : 1)

○ 60 degrees
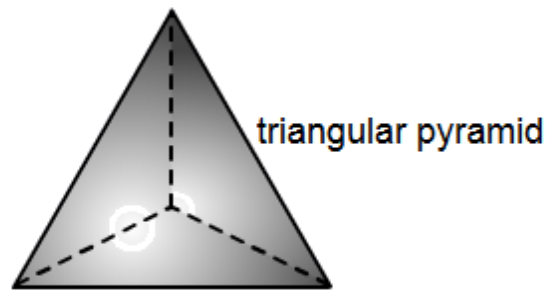○ 45 degrees

○ 50 degrees

Lesson 2.08
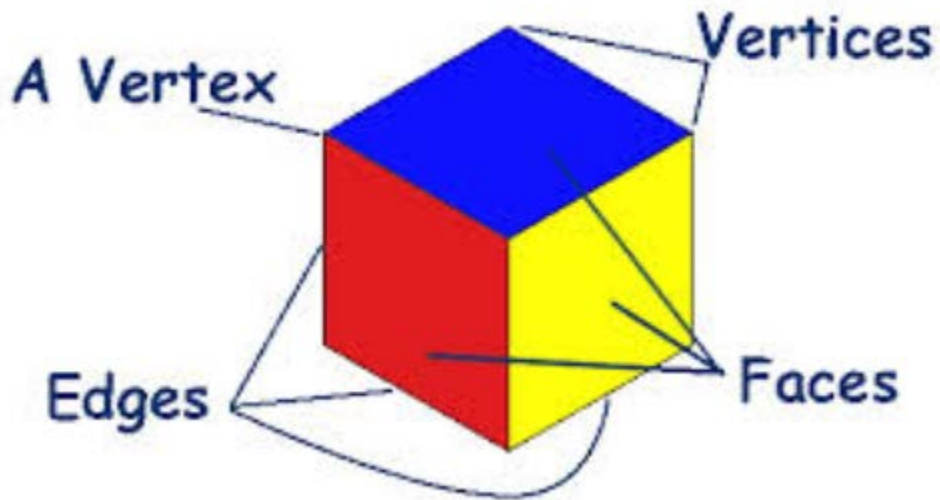
Prisms are polyhedrons that have two congruent bases. They are named for the shape of the base.
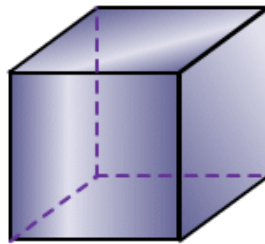
square prism

Pyramids are polyhedrons that have one base. The other faces are triangles.
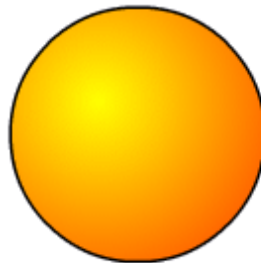
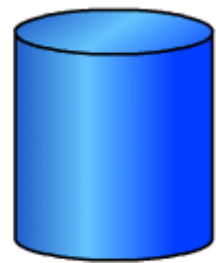triangular pyramid

Pyramids are named for the shape of the base.

These are space figures that have non-polygon shapes:

cone   sphere   cylinder

Characteristics of Geometric Solids

Geometric Solid	Number of Faces	Number of Vertices	Number of Edges	Shape of Faces
Cube	6	8	12	all are square
Triangular Pyramid	4	4	6	all are triangles
Square Pyramid	5	5	8	1 square 3 4 triangles
Triangular Prism	5	6	9	2 triangles 3 3 rectangles
Rectangular Prism	6	8	12	rectangles
Cylinder	2 faces, 1 curved surface	0	0/2 ?	circles
Sphere	1 curved surface	0	0	none
Cone	1 face 3 1 curved surface 1 apex		0/1 ?	circle

PRACTICE

1. How many edges does this figure have?
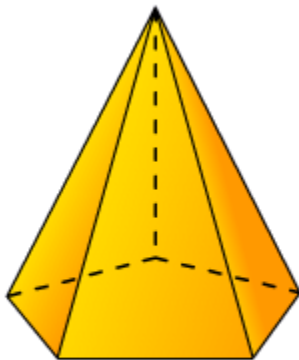
__ edges

2. How many vertices does this figure have?

__ vertices
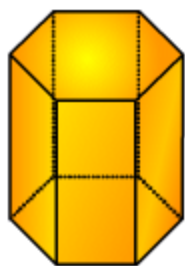
Additional Resources

http://www.mathsisfun.com/geometry/degrees.html

http://www.sheppardsoftware.com/mathgames/geometry/shapeshoot/SSCongruentSimilar.htm

http://www.studyzone.org/testprep/math4/e/congruentsimilar3p.cfm

http://www.sheppardsoftware.com/mathgames/geometry/shapeshoot/TranslateShapesShoot.htm

http://illuminations.nctm.org/Activity.aspx?id=3521

http://www.mathsisfun.com/geometry/vertices-faces-edges.html

http://www.turtlediary.com/grade-2-games/math-games/vertices.html

http://studyjams.scholastic.com/studyjams/jams/math/geometry/edges-faces-vertices.htm