Geometry Review #1 ☺

Name __*Key*__   Date _____

Points, Lines, Planes, Line Segments, and Rays

Fill in the blanks below with these terms.

|				
point	intersecting lines	line	line segment	
plane	perpendicular lines	ray	parallel lines	skewed lines

a. Two lines that meet are called __*intersecting lines*__ .

b. Two lines that intersect and form a right angle are called __*perpendicular lines*__

c. A __*ray*__ is part of a line with one endpoint but goes on forever in the other direction.

d. The symbol for a __*point*__ is a dot.

e. A __*plane*__ is any flat surface that continues in all directions.

f. In geometry, a __*line*__ extends endlessly in both directions.

g. A __*line segment*__ is part of a line with two endpoints.

h. Lines that are not in the same plane and do not intersect are called __*Skewed lines*__ .

i. __*parallel lines*__ are two lines in the same plane yet never intersect.

Name _____   Date _____

Angles

Fill in the blanks with these terms.

    straight angle   right angle   acute angle   obtuse angle   vertex

a. A _*right angle*_ measures 90°.

b. When you write an angle with three letters (∠ABC), the _*vertex*_ is always the middle letter.

c. An _*obtuse angle*_ is greater than 90°.

d. A _*straight angle*_ measures 180°.

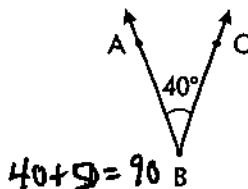e. An _*acute angle*_ is less than 90°.
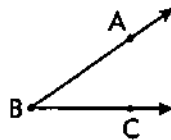
f. In this figure, the vertex is _*point B*_.

g. In the figure, the two rays are _$\vec{BA}$_ and _$\vec{BC}$_.

h. In the figure, is the angle acute or obtuse? _*acute*_

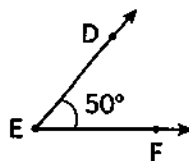*giving a compliment is the right thing to do* ☺

Two angles are complementary if their measures have a sum of 90°. (right)
Two angles are supplementary if their measures have a sum of 180°. (straight)

Are the pairs of angles below complementary or supplementary?

40+50 = 90

120+60 = 180

i. _*Complementary*_

j. _*Supplementary*_

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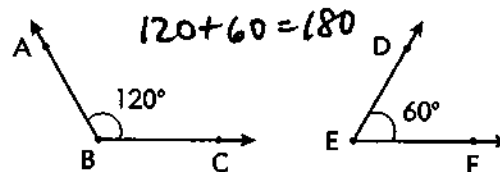
Polygons

Write TRUE or FALSE for the following statements.

a. A polygon must be a closed figure.   _*true*_

b. A polygon must be bounded by line segments.   _*true*_

c. A circle is a polygon.   _*false*_

d. A triangle has 3 sides and 3 angles.   _*true*_

e. A polygon with 5 sides is called a hexagon.   _*false*_ (pentagon = 5) (hexagon = 6)

f. The size of the angles in a triangle must all be the same.   _*false*_

g. ⏢   is a quadrilateral.   _*true*_

h. ⊔   is a polygon.   _*false*_

i. Octagons have 8 sides.   _*true*_

j. Quadrilaterals have 4 angles.   _*true*_

Fill in the table with the correct numbers.

Polygons	Number of Sides	Number of Angles
Triangles	k. 3	3
Quadrilaterals	l. 4	4
Pentagons	m. 5	5
Hexagons	n. 6	6
Octagons	o. 8	8
Nanogon	p. 9	9
Decagon	q. 10	10
Heptagon	7	7

Name _____   Date _____

Triangles

Use these terms to identify the triangles.

| right triangle | equilateral triangle | isosceles triangle |
| scalene triangle | obtuse triangle | acute triangle |

a.
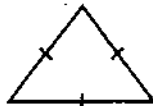
equilateral triangle

b.
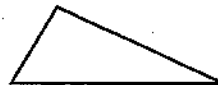
scalene triangle

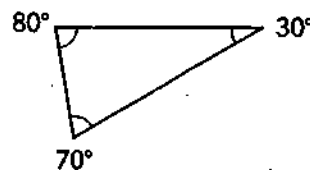c.

50°   20°

·110°

obtuse triangle

d.

45°

45°
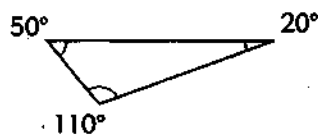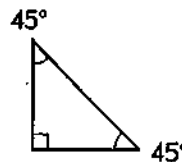
right triangle

e.

isosceles triangle

f.

80°   30°

70°

(scalene triangle)
acute triangle

Fill in the blanks.

g. An angle greater than 90 degrees is an ____obtuse____ angle.

h. All the angles of a triangle add up to __180__ degrees.

i. A right angle is one that is equal to ____90____ degrees.

j. Two figures are ____congruent____ if they are the same size and the same shape.

k. An angle less than 90 degrees is an ____acute____ angle.

Circles

Use these terms to identify the circles.

radius · semicircle · chord · diameter · arc · central angle
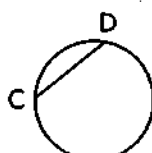
a.
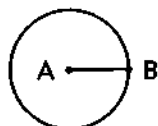
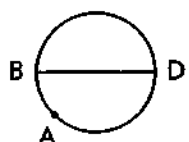$\overline{BA}$ = _radius_
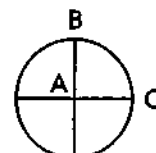
b.

$\overline{DE}$ = _diameter_

c.

$\overrightarrow{CD}$ = _chord_

d.

DE = _arc_

e.

DAB = _diameter_
semicircle

f.

∠BAC = _central angle_

Fill in the blanks.

g. The _circumference_ of a circle is another name for the perimeter of a circle.

h. An _arc_ is part of a circle named by either two or three points on the circumference of the circle.

i. A _chord_ is a line segment that connects any two points on the circle.

j. A chord that passes through the center of a circle is called a _diameter_.

k. A _central angle_ angle has the center of a circle as its vertex.

Quadrilaterals

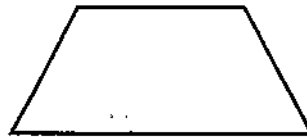Use these terms to identify the quadrilaterals.

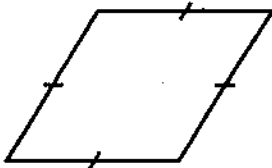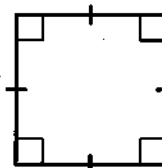square   rhombus   trapezoid   rectangle

a.

rectangle

b.

trapezoid

c.

rhombus

d.

square
rhombus
rectangle

Fill in the blanks.

e. _parallel_ lines are lines that never meet.

f. A _parallelogram_ is a quadrilateral with opposite sides that are parallel.

g. Every rectangle is a _parallelogram_.

h. Every rhombus is a _parallelogram_.
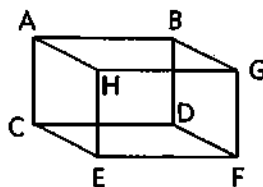
i. Every _square_ is a rectangle, rhombus, and parallelogram.

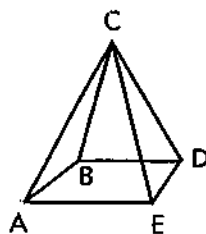j. A _Quadrilateral_ is a polygon with four sides.

Name _____   Date _____

Prisms and Pyramids

Fill in the blanks.

a. Two-dimensional objects have __*length*__ and __*width*__.

b. Three-dimensional objects have __*length*__, __*width*__, and __*height (depth)*__.

c. The 6 faces in the above quadrilateral prism are __*ABDC*__, __*HGFC*__, __*ACEH*__, __*BGFD*__, __*ABGH*__, and __*CDFE*__.

d. The pyramid above is a quadrilateral pyramid because the __*base*__ of the pyramid is a quadrilateral.

e. The point at which the faces of a pyramid meet is called the __*vertex*__.

f. The 5 faces of this pyramid are __Δ *ACE*__, __Δ *ECD*__, __Δ *DCB*__, __Δ *BCA*__, and __□ *ABDE*__.

Name _____   Date _____

Congruent Figures

Label the following figures as congruent or not congruent.

a.

Congruent

b.

not congruent
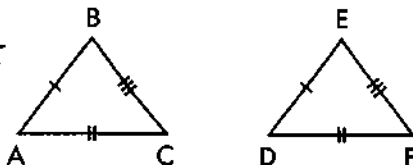
c.

not congruent

Use triangles ABC and DEF for the following problems.

≅ *congruent*

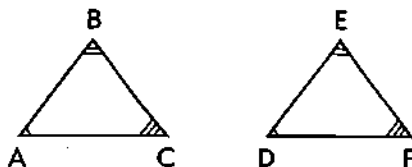d. $\overline{AB} \cong$ _*DE*_   e. $\overline{AC} \cong$ _*DF*_   f. $\overline{BC} \cong$ _*EF*_

g. Triangle ABC is congruent to triangle DEF because the corresponding sides are
*Congruent* .

h. The triangles have the same _*size (same shape)*_

Use triangles ABC and DEF for the following problems.

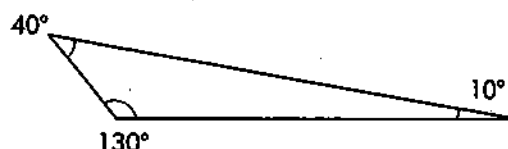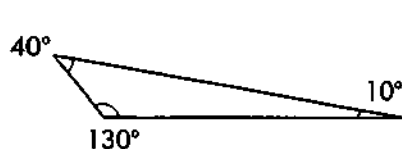i. $\angle A = \angle$ _*D*_   j. $\angle B = \angle$ _*E*_   k. $\angle C = \angle$ _*F*_

l. Triangle ABC is congruent to triangle DEF because the corresponding
*angles* and the corresponding _*sides*_ are congruent.

Similar Figures

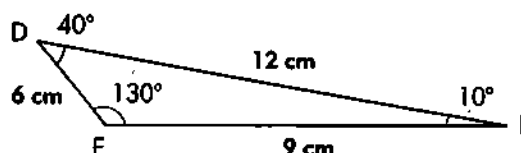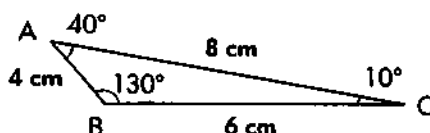Similar figures have the same shape but not necessarily the same size.

Corresponding angles of similar triangles are congruent.

Give the corresponding angles for the following using the figures below.

a. ∠A ≅ __∠D__   b. ∠B ≅ __∠E__   c. ∠C ≅ __∠F__

Triangles are similar if corresponding angles are equal. As a result the ratios of the lengths of corresponding sides are also equal.

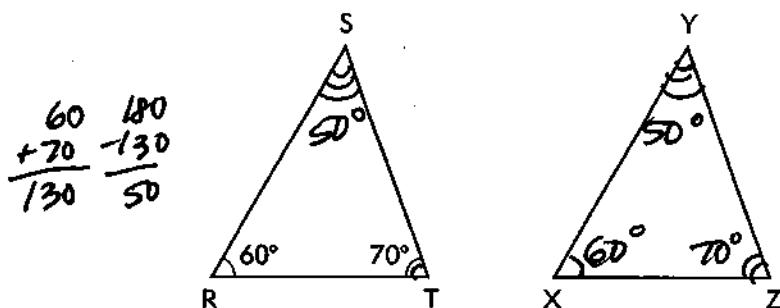$$\frac{\text{Length AB}}{\text{Length DE}} = \frac{4}{6} = \frac{2}{3}$$

d. $\dfrac{\text{Length } \overline{BC}}{\text{Length } \overline{EF}} = \dfrac{6}{9} = \dfrac{2}{3}$

e. $\dfrac{\text{Length } \overline{AC}}{\text{Length } \overline{DF}} = \dfrac{8}{12} = \dfrac{2}{3}$
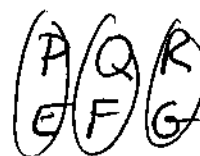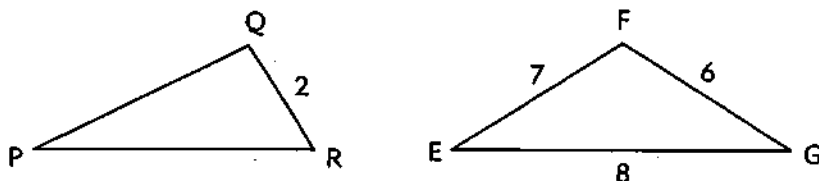
Similar Figures, continued

Triangle RST and triangle XYZ are similar.

$$60 \qquad \cancel{180}$$
$$+70 \quad -130$$
$$\overline{130} \quad \overline{50}$$

Find the measure of each angle.

a. ∠S __50°__

b. ∠X __60°__

c. ∠Z __70°__

d. ∠Y __50°__

Triangle PQR and triangle EFG are similar.

Write the corresponding sides.

e. $\overline{PQ} \leftrightarrow$ __EF__

f. $\overline{QR} \leftrightarrow$ __FG__

g. $\overline{PR} \leftrightarrow$ __EG__

Find the length of each side.

h. side $\overline{PQ} =$ __$2\frac{1}{3}$__

i. side $\overline{PR} =$ __$2\frac{2}{3}$__

$$\frac{PQ}{7} = \frac{2}{6} \qquad 14 \div 6 = 2\frac{1}{3}$$
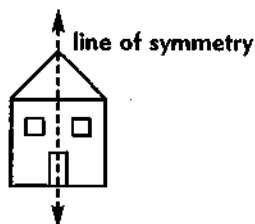
$$\frac{PR}{8} = \frac{2}{6} \qquad 16 \div 6 = 2\frac{2}{3}$$
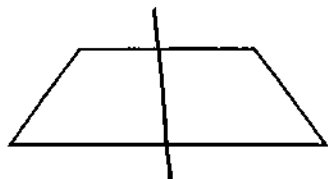
Symmetry

Many designers use symmetry to create their designs and to create two matching parts. Some buildings are designed to be symmetrical.

You can create a line of symmetry in the drawing of the house below by placing a line down the center of the house. The house has two matching halves.
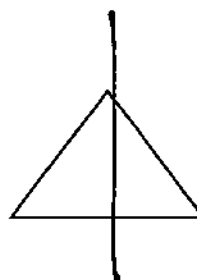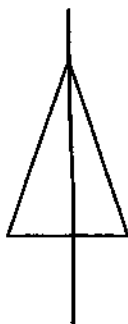
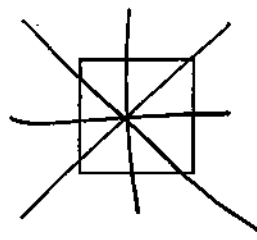Draw the lines of symmetry on the following figures.

a.

b.

c.

d.

e.

Cones and Cylinders

Label the following statements as either true or false. Correct the false statements.

a. Congruent means having the same size and shape.   *true*

b. A cone is a two-dimensional figure that has a
    closed curve for a base.   *false   3D*

c. The base of a cone is a nonpolygon.   *true*

d. The point of a cone is called the vertex.   *true*

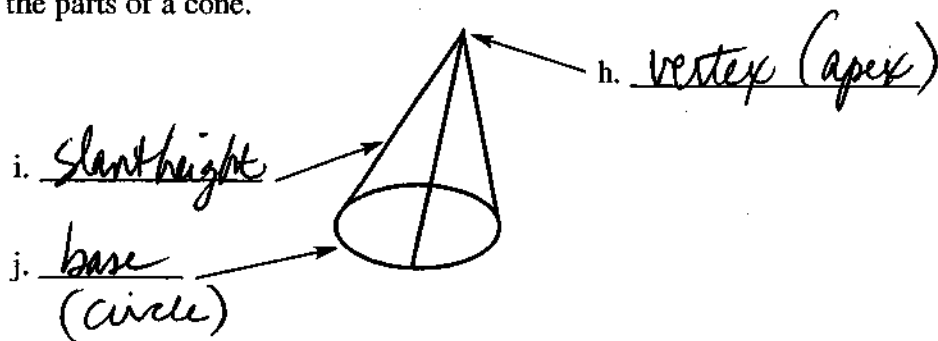e. A can is an example of a cone.   *false   cylinder*
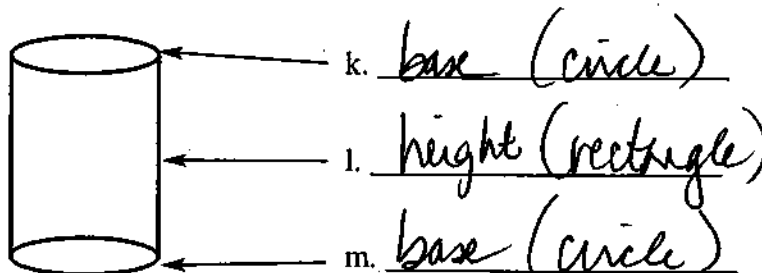
f. A cylinder has no vertex.   *true*

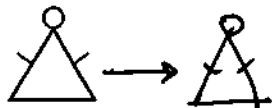g. A cylinder has two parallel bases.   *true*

Label the parts of a cone.

h. *vertex (apex)*

i. *Slant height*

j. *base (circle)*

Label the parts of a cylinder.

k. *base (circle)*

l. *height (rectangle)*

m. *base (circle)*

Slides

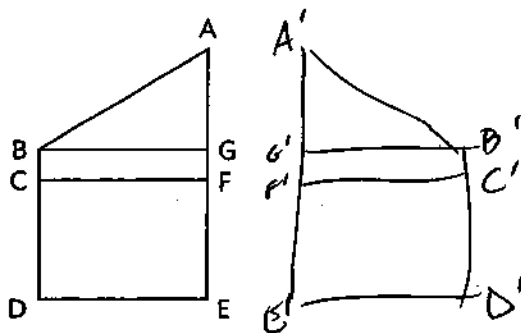A slide is made by moving a figure or object along a line.

a. Draw a slide image of this figure.

b. Draw a slide image of this letter.

Reflections

A flip image is called a reflection.

c. Draw a reflection of this figure.

14

Rotations

Turning a figure around a point is called a rotation.

Rotate this figure 90 degrees to the right by the number
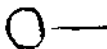of turns listed below.

a. 1 turn to the right.

b. 2 turns to the right.

c. 3 turns to the right.

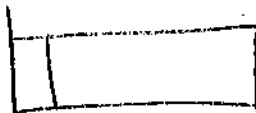d. 4 turns to the right.

Rotate this figure 90 degrees to the left by the number
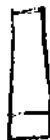of turns listed below.

a. 1 turn to the left.

b. 2 turns to the left.

c. 3 turns to the left.

d. 4 turns to the left.