Geometry

Name_____

Chapter 2 Review Guide

Date_____ Hour_____

1) Know this vocabulary:

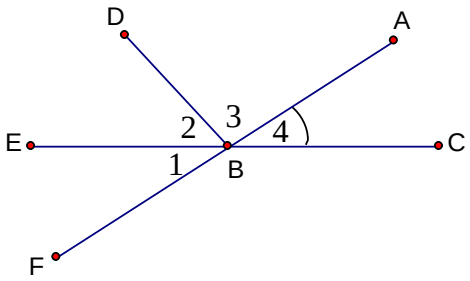
conjecture	counterexample	statement	truth value	negation	conjunction
disjunction	truth table	conditional	hypothesis	conclusion	converse
inverse	contrapositive	Law of Detachment	Law of Syllogism		postulate
theorem	complementary	supplementary	linear pair	vertical angles	straight angle
obtuse angle	acute angle	right angle	midpoint	congruent	perpendicular

2) Properties of real numbers Prove using a two column or paragraph algebraic proof.

If 7(x - 5) + 6 = -43 then x = -2

3) Patterns. What number should come next? 36, 34, 30, 28, 24…

4) Identification of angles.



a. Name an angle that that is adjacent to $\angle ABC$

b. Name a pair of vertical angles

c. What is true about the measures of the angles you picked in part b?

d. Name a linear pair (It's a line with a pair of angles on it . . . I call it a line pair)

5) Determine whether each statement is always, sometimes, or never true.

a. The intersection of 2 different lines is a line

b. If P is the midpoint of $\overline{XY}$, then XP = PY

c. Four points determine 6 lines

d. If AB + BC = AC, then B is the midpoint of AC

6) Fill out this Truth Table

p	q	$\sim p \wedge q$
T	T	
T	F	
F	T	
F	F	

7) Given: $\overline{AB} \cong \overline{CD}$
Prove: $\overline{AC} \cong \overline{BD}$

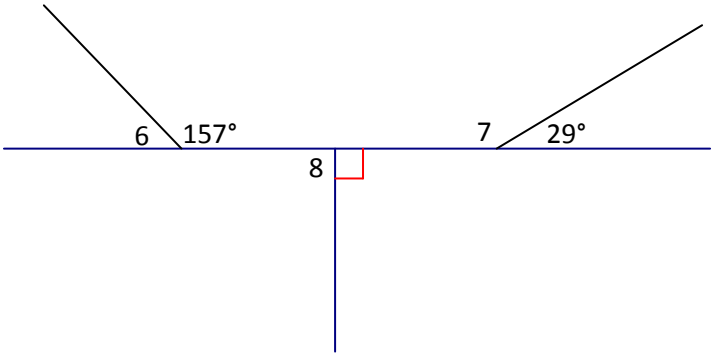
Statements	Reasons

8) State whether the following are True or False conjectures. If False, provide a counterexample.

a) Three non-collinear points form a triangle

b) Two angles are complementary therefore they form a right angle.

9) Find the measure of each angle:



a) $m\angle 6 =$ _____

b) $m\angle 7 =$ _____

c) $m\angle 8 =$ _____

10) Determine whether statement (3) follows from statements (1) and (2) by the Law of Detachment or Syllogism. If so, state which law was used. If not, write invalid.

a) (1) If a student attends Eureka High School, then he or she has an ID number.

(2) Kyle attends Eureka High School.

(3) Kyle has an ID number.

b) (1) If a rectangle has four congruent sides, then it is a square

(2) A square has diagonals that are perpendicular.

(3) A rectangle has diagonals that are congruent.

11) Identify the hypothesis and conclusion of the statement.

When you grow up in the country you relate to country music.

*hypothesis*_____

*conclusion*_____

Write the statement in If-then form.

Write the Converse:

Write the Inverse:

Write the Contrapositive:

12) Determine the next item in the sequence. Then write a conjecture about the 20^{th} item in the sequence.

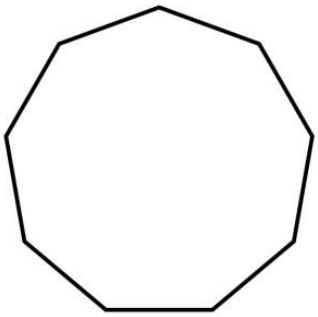
1 1/2 1/4 1/8 1/16 …..

13a) Write a true conjunction.

13b) Write a false disjunction.

14) Name the polygon on the right. This is a regular polygon.

Mark this so it's clear that it's a regular polygon.



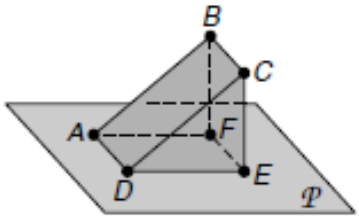
15) Construct a Venn Diagram.

Out of 40 students, 14 are taking English Composition, 29 are taking Chemistry, and 5 students are in both.

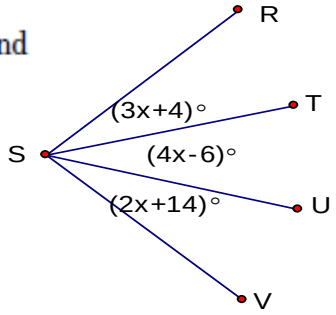
a) How many students are in neither class?

b) How many are in Chemistry or English or both classes?

16) Name five planes shown in the figure.

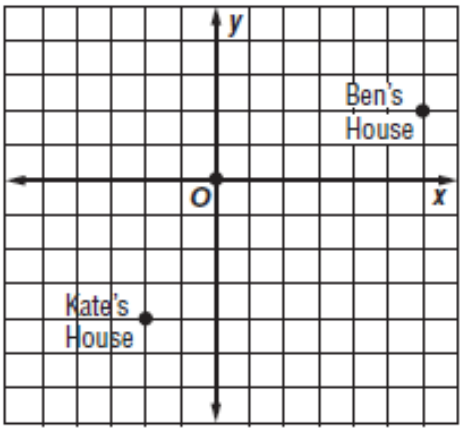


17) Find $m\angle RST$ if $\overrightarrow{ST}$ bisects $\angle RSU$ and $\overrightarrow{SU}$ bisects $\angle TSV$.



18) Draw and label a figure that shows that plane $\mathcal{R}$ contains both lines s and $\overleftrightarrow{AC}$ that intersect at point B. Name three collinear points in plane $\mathcal{R}$.

19) Ben and Kate are making a map of their neighborhood on a piece of graph paper. They decide to make one unit on the graph paper correspond to 100 yards. First, they put their homes on the map as shown on the right.



a) How many yards apart are Kate's and Ben's homes?

b) Their friend Jason lives exactly halfway between Ben and Kate. Mark the location of Jason's home on the map, by using the midpoint formula.

20a) Two angles are _____ if their measures have a sum of 90˚.

20b) Two angles are _____ if their measures have a sum of 180˚.