

**QUIZ #1 @ 50 points**

Write in a neat and organized fashion. Use a pencil. Show all work to get credit.

1) Write the converse, inverse, and contrapositive of the following statement. Then state whether each statement is true or false.

An angle is right if its measure is exactly 90 degrees.

*if the measure of an angle is exactly 90 degrees, then the angle is a right angle*

Converse if an angle is right, then its measure is 90 degrees

True  False

Inverse if the measure of an angle is not 90°, then the angle is not right

True  False

Contrapositive if an angle is not right, then its measure is not 90°

True  False

2) Form a truth table and determine all possible truth values for  $[(P \wedge Q) \rightarrow P] \vee Q$ .

Is the given statement a tautology?

P	Q	$P \wedge Q$	$(P \wedge Q) \rightarrow P$	$[(P \wedge Q) \rightarrow P] \vee Q$
T	T	T	T	T
T	F	F	T	T
F	T	F	T	T
F	F	F	T	T

*yes, the statement is a tautology*

3) Complete the following to make valid arguments:

a) Premise 1:  $P \rightarrow Q$

Premise 2:  $\sim Q$

Conclusion:  $\sim P$



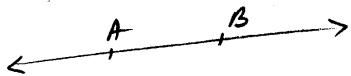
b) Premise 1:  $P \rightarrow Q$

Premise 2:  $Q \rightarrow R$

Conclusion:  $P \rightarrow R$

4) Classify the following names as names of *points, lines, segments, distances (lengths), rays, or angles.*  
Make a drawing for each geometric figure

a)  $\overline{AB}$  line



Check one: geometric figure  real number

b)  $\overline{AB}$  ray



Check one: geometric figure  real number

c)  $\overline{AB}$  segment

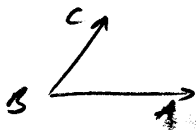


Check one: geometric figure  real number

d)  $AB$  length of segment  $\overline{AB}$

Check one: geometric figure  real number

e)  $\angle ABC$  angle



Check one: geometric figure  real number

5) Given the figure, name:

a) three acute angles  
 $\angle 1, \angle 2, \angle 4$

b) Two right angles  
 $\angle 3, \angle AVC$

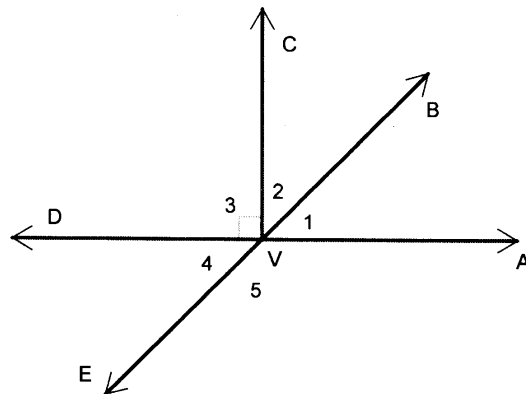
c) One obtuse angle  
 $\angle 5$

d) One straight angle  
 $\angle AVD$

e) Two complementary angles  
 $\angle 1$  and  $\angle 2$

g) Two adjacent angles  
 $\angle 3$  and  $\angle 4$

i) Two opposite rays  
 $\overrightarrow{VA}$  and  $\overrightarrow{VD}$



f) Two supplementary angles  
 $\angle AVB$  and  $\angle BVD$

h) Two nonadjacent angles  
 $\angle 4$  and  $\angle 2$

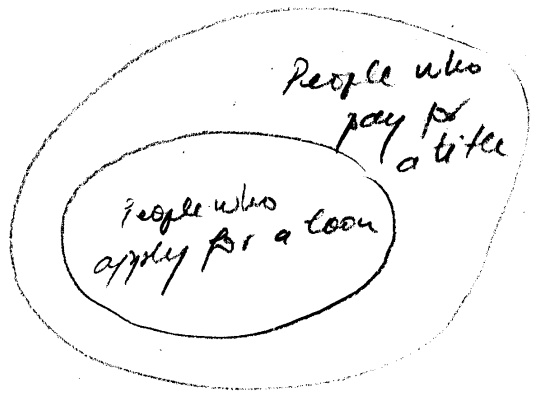
j) Three noncollinear points.  
 $E, V, C$

6) Decide whether each argument is valid or invalid.

- a) All people who apply for a loan must pay for a title search.  
Cindy paid for a title search

Cindy applied for a loan.

Check one: Valid  Invalid



- b) If John and Ana stop to visit, I will prepare a meal.  
John stopped to visit at 6:00 pm.

~~I will prepare a meal~~

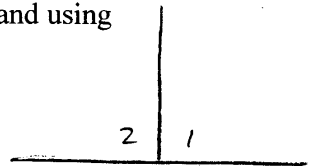
Check one: Valid  Invalid

7) a) State the hypothesis and the conclusion for the following statement both in words and using mathematical symbols. Make a drawing to illustrate the statement. DO NOT PROVE.

Two equal supplementary angles are right angles.

Hypothesis:  $\angle 1, \angle 2 = \text{supplementary}$   
 $m\angle 1 = m\angle 2$

Conclusion:  $\angle 1, \angle 2 = \text{right angles}$

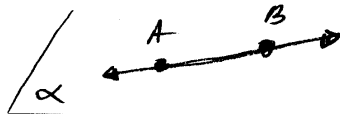


8) Complete the following postulates and make a drawing to illustrate each one.

- a) Two points determine a line



- b) Given two distinct points in a plane, the line containing these points is in the plane



- c) If D is a point on a segment AL, then  $AD + DL = AL$



- d) If A is a point in the interior of the angle PQR, then  $m\angle PQA + m\angle AQR = m\angle PQR$

