

Homework #1

Name: _____

Due: 3:00pm on January 28, 2010

Math 166 Section: _____

Row: _____

This assignment is due by 3:00pm on January 28, 2010 You can turn it in to me in class or drop it by the office, **Blocker 640D**. Be sure that you follow the homework rules, they can be found on your syllabus. Please work the problems in the order that they are listed.

1. (2 points) Determine the truth value of the following statements if you know that p and r are both TRUE and s and q are both FALSE.

(a) $\sim p \vee q \vee (\sim s \wedge r)$

(b) $(\sim (p \vee q) \wedge s) \underline{\vee} (\sim r \wedge (q \vee s))$

2. (4 points) Construct the truth table for the given statements.

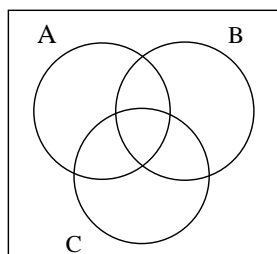
(a) $(p \underline{\vee} q) \wedge r$

(b) $(p \vee \sim q) \wedge (\sim p \underline{\vee} \sim r)$

3. (3 points) Shade the part of the venn diagram that is represents each of the given sets. Please draw your venn diagrams in the following way to make grading easier.

(a) $A^C \cap B \cap C$

(b) $A \cap (B^C \cup C^C)$



4. (3 points) Use these sets and answer the following questions:

$$U = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

$$A = \{0, 2, 4, 6, 8\}$$

$$B = \{3, 4, 5, 6, 7, 8\}$$

$$C = \{0, 2, 5, 9\}$$

$$D = \{1, 2, 3, 4, 5, 8\}$$

$$E = \{0, 2, 7, 8\}$$

(a) $A \cap (C \cup E) =$

(b) $B \cap D^C =$

(c) How many subsets does the set A have?