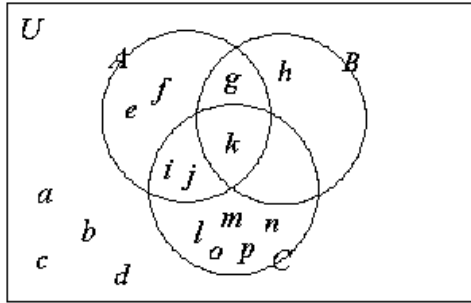


Quiz 3

Every answer must be fully justified. Show your work!!!

1. Use the Venn diagram below to find the indicated sets.



(a) $A \cap B$

(b) $B \cap C'$

(c) $(A \cup B \cup C)'$

2. Suppose you take a survey of 1000 college students. 300 of them have both a credit card and a checking account. 700 of them have a checking account and 500 of them have a credit card.

(a) Construct a Venn diagram showing the results of this survey.

(b) How many of the survey respondents have neither a credit card nor a checking account?

3. Translate the following argument into symbolic form:

If that animal is a bird then it can fly.

If that animal cannot fly, then it must be hurt.

\therefore That animal is not hurt.

4. (a) Use a truth table to show that this argument is invalid:

$$p \rightarrow q$$

$$q \rightarrow p$$

$$\therefore p \wedge q$$

(b) Make up an argument in words that has the same symbolic form as this argument.