

1. (12 points) Identify the premises, conclusion, and the type of Fallacies

(a) I ate oysters for dinner and later that night I had a nightmare. Oyster caused my nightmare

(b) My uncle never drank alcohol and lived to be 93 years old. That's how I know that avoiding alcohol leads to greater longevity.

(c) Apple's iPhones outsell all other smart phones, so they must be the best smart phones on the market.

2. (20 points) For the two statements  $p$ ,  $q$  find the following logical argument truth table for Negation: not  $p$  ( $\sim p$ ), Conjunction:  $p$  and  $q$  ( $p \wedge q$ ), Disjunction:  $p$  or  $q$  ( $p \vee q$ ), Conditional:

if  $p$  then  $q$  ( $p \implies q$ ), Inverse: if not  $p$  then not  $q$  ( $\sim p \implies \sim q$ ), Converse: if  $q$  then  $p$  ( $q \implies p$ ), Contrapositive: if not  $q$  then not  $p$  ( $\sim q \implies \sim p$ ) .

3. (15 points) A movie critics reviewed 36 films: 12 were documentaries and 24 were feature films. She gave favorable reviews to 18 of the 24 were feature films. She gave favorable reviews to 8 of the documentaries and unfavorable reviews to 6 of the feature films.

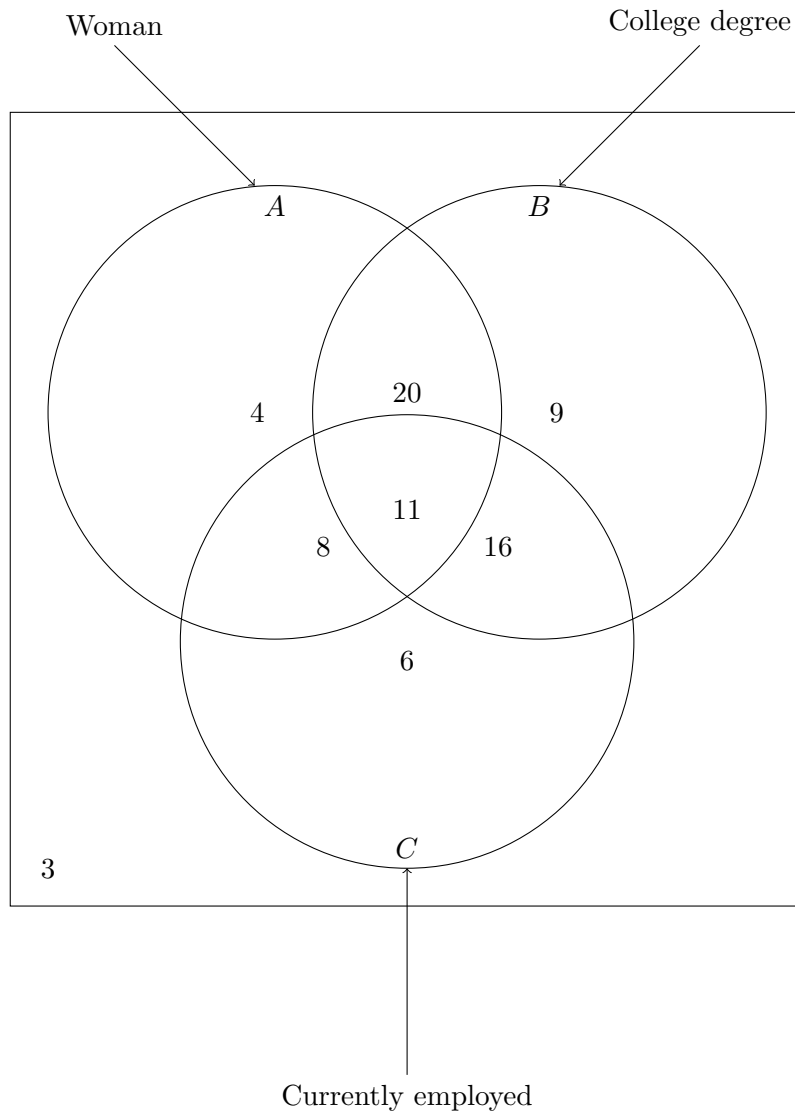
(a) Make a two-way table summarizing the reviews.

(b) Make a Venn diagram from the table in part (a).

(c) How many documentaries received unfavorable reviews?

(d) How many feature films received favorable reviews?

4. (10 points) Following is the Venn-diagram of the people at conference. Use the Venn Diagram to answer the following questions



- (a) How many people at the conference are employed men with a college degree?
- (b) How many people at the conference are employed men?
- (c) How many people at the conference are unemployed woman?
- (d) How many women are at the conference?

5. (10 points) Compute the compounded interest for the following problems.

(a) (5 points) \$5000 is invested for 10 years with an APR of 2% and quarterly compounding.

(b) (5 points) \$4000 is invested for 20 years with an APR of 2% and monthly compounding.

6. (10 points) For the following income and expenses compute the Net Cash flow:  
Income:

Part-time Job = \$650 per month  
College fund from grandparents: \$400 per month  
Scholarship: \$6000 per year.

Expenses:

Rent: \$500 per month.  
Groceries: \$60 per week.  
Tuition and Fees: \$3600 twice a year.  
Incidentals: \$120 per week

7. (15 points) You have a choice of two health insurance plans:

Plan A:

Monthly premium: \$300  
Annual deductible: \$5000  
Office visit co-payment: \$25.  
Emergency room co-payment: \$500  
Surgical operations co-payments: \$250 per year.

Plan B:

A annual premium: \$700  
Annual deductible: \$1500  
Office visit co-payment: \$25  
Emergency room co-payment: \$200  
Surgical operations co-payments: no co-payment.

Suppose that during a one-year period your family received the following medical bills. Service and Costs are as following:

Jan. 23: Emergency room \$800

Feb. 14: Office Visit \$100

Apr. 13: Surgery \$1400

June 14: Surgery \$7500

July 1: Office visit \$100

September 23 Emergency room \$1200

(a) (5 points) Determine your annual health care expenses if you have plan A.

(b) (5 points) Determine your annual health care expenses if you have plan B.

(c) (5 points) Determine your health care expenses if you have no health insurance. Does have no health insurance create any other risks for you? Explain.

8. (8 points) Determine the validity of the following statement.  
Premise: If taxes are cut the U.S. Government will have less revenue.  
Premises: If there is less revenue, then the federal deficit will be larger.  
Conclusion: Tax cuts will lead to a larger federal deficit.

Bonus:

9. (5 points) Determine the truth of the following premises, and check whether it is sound or not, Also present in the Venn-diagram.  
Premise: All queens are woman.  
Premises: Meryl Streep is a woman.  
Conclusion: Meryl Streep is a queen.