Name: _____ Math 211 POW Two

FORMAT

- Write neatly and clearly on white paper (lined or unlined)
- Attach a POW cover sheet to the front of your work for turn in

✓ Before starting your problem solving process, refer to your POW directions

For POW 2, you will be solving and extending Problem #34 from your text.

Lee has the flu, and he is concerned that he will not pass his mathematics exam. If the following three statements are true, will Lee pass the exam?

1) Lee will not fail the mathematics exam if he finishes his computer program.
2) If Lee goes to the theater, he does not have the flu.
3) If Lee does not go to the theater, he will finish his computer program.

Define the following sets of outcomes:

P: Lee passes the exam
F: Lee has the flu
C: Lee will finish his computer program
NT: Lee will NOT go to the theater

Question 1

Sketch a Venn diagram using the above sets that accurately reflects statements 1), 2) and 3) given above problem. Hint: Statement 3) implies that NT $\subset$ C (why?). Use Statement 1) and Statement 2) to get similar relationships that will help you sketch the Venn diagram.

Question 2

Will Lee pass the exam? **Refer to your Venn diagram** in your explanation.

Question 3

Are the following statements valid or invalid? Explain clearly; **refer to your Venn diagram** to explain/illustrate your arguments.

a. If Lee goes to the theater, he will not pass his exam.

b. If Lee fails his exam, then he went to the theater.

c. If Lee finishes his computer program, he did not go to the theater.