2.1 Homework

Write your answers notebook paper, not this sheet.

Sometimes the conclusion of a conditional statement is stated before the hypothesis. Compare the following statements:

> You live in Texas if you live in New Braunfels.
> If you live in New Braunfels, then you live in Texas.

1. Both statements have the same hypothesis. What is it?
2. Both statements have the same conclusion. What is it?
3. Are both statements true?

Compare these two statements:

> If it is snowing, then it is cold outside.
> If it is cold outside, then it is snowing.

4. Do both statements have the same hypothesis?
5. Are both statements true? Explain why or why not.
6. Do both statements mean the same thing?

Rewrite each of the following sentences in "if-then" form. You may change some of the words, but be careful not to change the meaning of the sentences.

7. All architects use geometry.
8. I ask questions whenever I don't understand.
9. Use the stairs instead of the elevator in case of fire.

Show that each conditional is false by finding a counterexample.
10. If you play a sport with a ball and bat, then you play baseball.
11. If a shape has four sides, then it is a square.

12. Draw an Euler diagram to represent the following statement:

> All players for the Boston Celtics make a lot of money.

13. Which of the following statements are illustrated by your diagram? Select all that apply.
    a. If you play for the Celtics, then you make a lot of money.
    b. If you make a lot of money, then you play for the Celtics.
    c. If you don't play for the Celtics, then you don't make a lot of money.
    d. If you don't make a lot of money, then you don't play for the Celtics.