What's a conditional?)

Three Parts:
1. The Test/Conditional
    1. What determines which branch to take.
2. "IF body"
    1. What to do if the test is true.
3. "ELSE body"
    1. What to do if the test is false.

A conditional is a way to chose between two or more options.

English: "If it is sunny then I will go to the beach, otherwise I will stay at home."
1. Test: "If it is sunny"
2. IF Body: "I will go to the beach"
3. ELSE Body: "I will stay at home"

C:
```
//Whatever is inside the parenthesis is the test.
if (sunny)
{
        //Whatever is inside these braces is the IF Body.
        printf("Go to beach!\n");
}
else
{
        //Whatever is inside these braces is the ELSE Body.
        printf("Stay at home. :(\n");
}
```

What is true?)

In C the definition for true or false is very relaxed. There is no "boolean" (true or false) datatype in C. Instead, true is anything that is not zero or NULL. Therefore, false must be only zero or NULL.

Conditional Operators)

- == - "Equals". True if the two operands are equal.
- ! - "Not". Inverses a truth value. (!false == true, !true == false)
- != - "Not Equals. True if the two operands are NOT equal.
- < - "Less than" - True if the left operand is less than the right operand.
- > - "Greater than" - True if the left operand is greater than the right operand.
- <= - "Less than or equal" - True if the left operand is less than or equal to the right operand.
- >= - "Greater than or equal" - True if the left operand is greater or equal to than the right operand.
- && - "And". True if the two operands are both true.
- || - "Or". True if either one (or both) of the operands are true.

else if)

Besides "if" and "else", there is one more control structure that you can use. This is the "else if". You can use the "else if" when you have to decide between more than two options.
Consider the case when you are trying to see if a number is negative or positive. You may also have to consider a case where the number is zero:

```
if (num < 0)
{
        //Here the number is negative.
}
else if (num == 0)
{
        //Here the number is zero.
}
else if (num > 0)
{
        //Here the number is positive
}
```

Variations)

There are certain variations of the classic if-else that you can use. Just make sure to follow these rules:
- You must have the if statement and body.
- You can have as many "else if"'s as you want.
- You can have at most one "else" (you may have none).

Questions)

1. How could you simplify the conditional in the "else if" section?
2. What is an equivalent statement to (a < b || a == b)?
3. Why should you be cautious if you want to use '==' with floats or doubles? (This one is hard, you may have to ask the internet.)

Program)

Make a program! This program should take two integers from the user. The output should depend on the relation between the numbers:
- Equal - "Those numbers are equal!"
- First greater than second - "The first one is bigger!"
- Second greater than first - "The second one is bigger!"

BUT, if the number add up to 2 than the program should output "SNAKE EYES!".

Example runs (input is in **bold**):
```
Please give me two numbers: 1 1
SNAKE EYES!
```

```
Please give me two numbers: 3 5
The second one is bigger!
```

```
Please give me two numbers: 9 7
The first one is bigger!
```

```
Please give me two numbers: 123 123
Those numbers are equal!
```

Handin)

Email me your answers to the questions for both parts and the source code for your program. No need to attach it, just paste it directly into the email. If I don't respond to your email than you got it right!