Name:

NYU ID:

You have ninety minutes to answer all of the questions below. Write your answers in the space provided. You should read over the entire exam before you answer any questions and budget your time accordingly.

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1. (20 points) Find 10 errors (there are more than 10) in the following Java program. The errors are both compile-time (syntactic) and run-time (logical). For each error, identify the line number and briefly explain how to fix it.

```java
import javax.swing.JOptionPane;

public Number {
    public static void MAIN(String[] args) {
        String str;
        int num, int digit1, i;
        char c;

        /* Get the number
        str = JOptionPane.showInputDialog(Enter a number (1-100):);
        num = (int) str;

        System.out.println("You picked " + Num);
        if( num % 2 = 0 )
            System.out.println("It is an even number.");
        else
            System.out.println('It is an odd number.');
        else
            System.out.println("It is a very odd number.");

        digit1 = num % 10;
        System.out.println("Its first digit is " digit1);
        c = char(num);
        println("It is the ASCII code for " + c);
        // Counting up to num
        i = 1.0;
        while( i < num );
            System.out.println(i);
    } // end main
} // end class
```
1. (cont’d)
2. (10 points) Given

    int silly;

Which of the following causes a number to be placed in silly. (circle one)

(a) System.out.println ( silly ) ;
(b) silly = JOptionPane.showInputDialog("Type your number") ;
(c) System.out.println ( "silly" ) ;
(d) "silly" = JOptionPane.showInputDialog("Type your number") ;
(e) silly = Integer.parseInt("123");

The correct answer is (e) silly = Integer.parseInt("123");

3. (10 points) Fill in the blanks so that no compile-time errors occur:

    _______ answer1, answer2;
    _______ = JOptionPane.showInputDialog("Type your first number") ;
    _______ = JOptionPane.showInputDialog("Type your second number") ;

4. (10 points) What are the values of x, y, and z after the following code executes?

    int x, y, z;
    x = 9;
    y = ++x / 5;
    z = x + y++;
5. (25 points) In the following, state the type and value of each of the following expressions. If the expression contains an error, write invalid as the type and omit the value.

(a) \[ 200 / 60 \]

TYPE:
VALUE:

(b) \[ 4 + 5.0 / 2 \]

TYPE:
VALUE:

(c) \[ -3 / 4 + 6 / (27 \% 9) \]

TYPE:
VALUE:

(d) \[ (7 \geq 3) \text{ || } ! 9 == 8 \]

TYPE:
VALUE:

(e) \[ ((\text{byte})(127+1) > 0) \&\& (\text{true} == \text{false}) \text{ || } (21.0/4.0 > 5) \]

TYPE:
VALUE:
6. (25 points) Write a program that reads digits from the keyboard using `JOptionPane.showInputDialog`. Convert each digit to the letter of the alphabet whose position is given by the digit, where 0 corresponds to the letter 'a'. E.g., if the input is 024, the output will be ace.