

1. Use a decision structure to write an appropriate statement for each of the following:

a) Display Great job! when grade is 90 or higher.

```
if (grade >= 90) {  
    System.out.println("Great job!");  
}
```

b) Display Error when number is less than 20 or greater than 50.

```
if (num < 20 || num > 50) {  
    System.out.println("Error");  
}
```

c) Add 2 to the value of y when y is less than 100.

```
if (y < 100) {  
    y += 2;  
}
```

5. Identify the logic errors in the statements below, which should display a single appropriate message for any value of age:

```
if (age < 18) {  
    System.out.println("child");  
}
```

- when 18 is input, nothing will show
- when 65 is input, nothing will show

```
else if (age > 18 && age < 65) {  
    System.out.println("adult");  
}
```

```
else if (age > 65) {  
    System.out.println("senior");  
}
```

6. Given the following assignments, determine if each of the following expressions evaluates to true or false: size = 100 weight = 50 value = 75

a) size > 50 && weight == 50

true

b) value < 100 && !(weight == 50)

false

c) size >= 100 || value >= 100

true

d) weight < 50 || size > 50

true

e) !(value < 75)

true

f) !(size > 100 && weight > 50 && value > 75)

true

g) (value < 125 || weight < 76) && size == 100

true