1. Write the table of precedence for the arithmetic (math) operators, the relational operators, and the logical operators. Be sure to list each operator at its appropriate place in the table.

<table>
<thead>
<tr>
<th>Operator Type</th>
<th>Operator(s)</th>
<th>Precedence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parentheses</td>
<td>()</td>
<td>Highest</td>
</tr>
<tr>
<td>Unary</td>
<td>+, -, !</td>
<td></td>
</tr>
<tr>
<td>Multiplicative</td>
<td>*, / , %</td>
<td></td>
</tr>
<tr>
<td>Additive</td>
<td>+, -</td>
<td></td>
</tr>
<tr>
<td>Relational</td>
<td>&gt;, &lt;, &gt;=, &lt;=, ==, !=</td>
<td></td>
</tr>
<tr>
<td>Logical AND</td>
<td>&amp;&amp;</td>
<td></td>
</tr>
<tr>
<td>Logical OR</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Result Value | Result Type
a.) 5 + 1 * 3 | 8 | int
b.) age * 3 - age / 2 | 45 | int
c.) age * (16 - age) / 2 | -18 | int
d.) age * ((10.0 - age) / (-2)) | 72.0 | float
e.) weight - age * 2 | 89.5 | float
f.) age / 12 | 1 | int
g.) (float)18 / 12 | 1.5 | float
h.) (float)(age / 12) | 1.0 | float

3. Result Value
a.) score < average | false
b.) average + 11.1 >= score | true
c.) grade == 'D' | ERROR
d.) !(average == 0) == (average != 0) | true
e.) average < 60 || score != 100 | true
f.) willGraduate && (average > 90) | false
g.) score = 100 | true
h.) score - 86 | false

4. a.) make average be 80.0 and make score be 85 if the grade is a B.

```cpp
if (grade == 'B')
{
    average = 80.0;
    score = 85;
}
```

b.) change grade to an F if the score is lower than a 60, otherwise make it an A.

```cpp
if (score < 60)
    grade = 'F';
else
    grade = 'A';
```
c.) for anyone who has a grade of C, as well as anyone that will graduate, print out the value of average.

```cpp
if (grade == 'C' || will Graduate)
    printf("%f", average);
```
d.) for anyone who has an average from 80 up to (but not including) 90, make grade a B.

```cpp
if (average >= 80 && average < 90)
    grade = 'B';
```

5. Assume that the new income tax tables look like the following:

<table>
<thead>
<tr>
<th>Your yearly income is at least:</th>
<th>But less than:</th>
<th>You pay:</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$1,000</td>
<td>0%</td>
</tr>
<tr>
<td>$1,000</td>
<td>$10,000</td>
<td>5%</td>
</tr>
<tr>
<td>$10,000</td>
<td>$25,000</td>
<td>10%</td>
</tr>
<tr>
<td>$25,000</td>
<td>$50,000</td>
<td>20%</td>
</tr>
<tr>
<td>$50,000</td>
<td>$100,000</td>
<td>32%</td>
</tr>
<tr>
<td>$100,000</td>
<td></td>
<td>50%</td>
</tr>
</tbody>
</table>
Fill in the blanks in the following program fragment:

```java
double income, taxRate;
income = readDouble("What is your yearly income? ");
if (income < 1000.00)
taxRate = 0;
else if (income < 10000.00)
taxRate = 0.05;
else if (income < 25000.00)
taxRate = 0.1;
else if (income < 50000.00)
taxRate = 0.2;
else if (income < 100000.00)
taxRate = 0.32;
else
taxRate = 0.5;
println("Your taxes are $" + (income * taxRate));
```

6. Write a switch statement to display the number of days in a desired month (assume that only numbers 1-12 will be input, and it is not leap year), following the program fragment given below:

```java
int month;
month = readInt("What month? (Use 1 for Jan, 2 for Feb, etc.) ");
switch(month)
{
    case 4:
    case 6:
    case 9:
    case 11:
        println("There are 30 days in month #" + month);
        break;
    case 2:
        println("There are 28 days in month #" + month);
        break;
    default:
        println("There are 31 days in month #" + month);
}
```

7. Write a switch statement to display the name of a day of the week (with an error message for an invalid day number), following the program fragment given below:

```java
int dow;
dow = readInt("What day of the week? (starting with 1 for Sunday) ");
switch(dow)
{
    case 1: println("Sunday");
            break;
    case 2: println("Monday");
            break;
    case 3: println("Tuesday");
            break;
    case 4: println("Wednesday");
            break;
    case 5: println("Thursday");
            break;
    case 6: println("Friday");
            break;
    case 7: println("Saturday");
            break;
    default: println("No such day!");
            break;
}
```
8. Write a single print statement which will display the lines:

"Stick 'em up! Your money or your life.", said the mugger.
"I'm thinking!", replied Jack Benny.

with 10 blank lines between them.

print("\n"Stick 'em up! Your money or your life.\n" + "\n\n\n\n\n\n\n\n\n\nI'm thinking!\n", replied Jack Benny.);

9. Write a statement which will:
   a. convert the string “2.5” into a real number and store the result in a float variable named firstValue:
      firstValue = Float.parseFloat("2.5");
   b. convert the string “7” into an integer number and store the result in an int variable named secondValue:
      secondValue = Integer.parseInt("7");
   c. create a random number greater than or equal to 0, but less than 1, and store the result in a double variable named thirdValue:
      thirdValue = Math.random();

10. Write a program fragment to:
    a. create a blue oval called firstGraphic 20 pixels tall and 120 pixels wide, which is filled with yellow. The top left corner of the oval’s bounding box should be at 20 across and 35 down on the canvas.

        GOval firstGraphic;
        firstGraphic = new GOval(20, 35, 120, 20);
        add(firstGraphic);
        firstGraphic.setColor(BLUE);
        firstGraphic.setFilled(true);
        firstGraphic.setFillColor(YELLOW);

    b. create a piece of graphical text called secondGraphic using green 28 point bold Arial font. The bottom left corner of the text should be at 0 across and 50 down on the canvas. The text should be “Hello”.

        GLabel secondGraphic;
        secondGraphic = new GLabel("Hello", 0, 50);
        add(secondGraphic);
        secondGraphic.setColor(GREEN);
        secondGraphic.setFont("Arial-bold-28");

    c. create a red line called thirdGraphic from point (25, 10) to point (50, 200).

        GLine thirdGraphic;
        thirdGraphic = new GLine(25, 10, 50, 200);
        add(thirdGraphic);
        thirdGraphic.setColor(RED);

    d. erase firstGraphic and thirdGraphic from the canvas.

        remove(firstGraphic);
        remove(thirdGraphic);