

Problem 1

Consider the following Java variable declarations.

```
int i = 2; int j = 3;
```

```
float x = 4.0; float y = 7.0;
```

```
String s = "Why is this ";
```

```
boolean a = true; boolean b = false;
```

Given the above declarations, find the value of each of the following Java expressions.

- `i + 2 - j * 4;`
- `- j / i + - j % i`
- `y / x / - y - x`
- `s + "interesting " + "?"`
- `a AND 2 / 3 == 0`
- `! b AND x == y - j`
- `!(b OR s == "why" + "is" + "this")`

Problem 2

Write a Java program that computes the absolute value of a given number, for simplicity directly assign the input to a variable in the code.

Problem 3

SARConv is a currency conversion program, that performs foreign exchange calculation, from SAR to Euros (E), Dollars (D) or Yens (Y). Write a Java program that reads an amount in SAR and convert it to other three currencies. Note that:

1 JPY = 0.068 SAR

1 EUR = 5.48 SAR

1 USD = 3.75 SAR

Problem 4

In a market, a discount is made on a purchase as follows:

- If purchase ≤ 1000 , there is no discount.
- If $1000 < \text{purchase} \leq 2000$, a discount 5% on the amount above 1000.
- If purchase > 2000 , discount = 50 + 7.5% of the amount above 2000

Write a Java program that reads the purchase amount and calculates the money paid.

Problem 5

Write a C++ program to read a character and print a message “it is a vowel” if character is one of (a,e,i,o,u), “it is an operator” if character is (+,-,*,/) or “it is something else” if any other character. Use if – else, then use switch – case.