1. Show the result of the following remainders:
2. 56 % 6 = 2
3. 78 % -4 = -2
4. -34 % 5 = -4
5. -34 % -5 = 4
6. 5 % 1 = 0
7. 1 % 5 = 0
8. Show the result of the following code:

System.out.println(2 \* (5 / 2 + 5 / 2)); // 10

System.out.println(2 \* 5 / 2 + 2 \* 5 / 2); // 10

System.out.println(2 \* (5 / 2)); // 5

System.out.println(2 \* 5 / 2); // 5

1. Show the result of the following code and analyze the output.

System.out.println("25 / 4 is " + 25 / 4);

Out: 25 / 4 is 6 // as it simplifies to integer as it is int by int division

System.out.println("25 / 4.0 is " + 25 / 4.0);

Out: 35 / 4.0 is 6.25 // it simplifies to double data type as it is int by double (taking the largest)

System.out.println("3 \* 2 / 4 is " + 3 \* 2 / 4);

Out: 3 \* 2 / 4 is 1 // int by int would result in int output

System.out.println("3.0 \* 2 / 4 is " + 3.0 \* 2 / 4);

Out: 3.0 \* 2 /4 is 1.5 // double is manipulated with int which results in double as largest data type

1. Suppose m and r are integers. Write a Java expression for   to obtain a floating-point result. Get m and r values from the user.

(Please see Exercise3\_04.java file for the answer)

1. Today your credit card balance is $1000, and you plan to make equal payments (except for the last payment) per month until you pay off all of your debt (assuming you will not make additional purchases until you pay off the debt) . If you pay $65 per month:
2. compute how many months it will take for you to finish all your debt.
3. compute how much you will pay on the last month.

c) print the results you find for a) and b)  
Sample run :

The output for another scenario where the person owes $699 and makes fixed payments of $75 monthly would look as follows:

Text

Description automatically generated

(Please see Exercise3\_05.java file for the answer)

1. Ask user to enter time in seconds. Then print the time given in seconds into hours::minutes::seconds. (Hint: You need scanner to get the input, and use mathematical operations such as remainder, addition, multiplication, division, subtraction, etc. to convert time given in seconds into h::m::s)

Sample run:Text

Description automatically generated with medium confidence

Text

Description automatically generated with medium confidence

(Please see Exercise3\_06.java file for the answer)