

```
1 // Lab03
2 // The Mortgage Payment Program
3 // This is the student starting version of the Lab03 assignment.
4
5 public class MortgagePayment {
6
7     public static void main(String[] args) {
8         System.out.println("Lab03: The Mortgage Payment
9         Program\n");
10        double principal = 259000;
11        double annualRate = 5.75;
12        double monthlyRate = (annualRate/100) / 12;
13        double numYears = 30;
14        double numMonths = numYears * 12;
15
16        double monthlyPayment = (((monthlyRate * Math.pow((1 +
17        monthlyRate), (numMonths))) / Math.pow((1 + monthlyRate),
18        (numMonths)) - 1)) * principal);
19        double rmonthlyPayment = Math.round(monthlyPayment *
20        100.00) / 100.00;
21        double totPayment = rmonthlyPayment * numMonths;
22        double rtotPayment = Math.round(totPayment * 100.00) /
23        100.00; //re-rounding as an extra precaution for special cases,
24        even though the answer does not change for this case.
25        double totInterest = rtotPayment - principal;
26        double rtotInterest = Math.round(totInterest * 100.00) /
27        100.00; //re-rounding as an extra precaution for special cases,
28        even though the answer does not change for this case.
29
30        System.out.println("Principal:          $" + principal);
31        System.out.println("Annual Rate:         " + annualRate +
32        "%");
33        System.out.println("Number of Years:      " + numYears);
34        System.out.println("Monthly Payment:     $" +
35        rmonthlyPayment);
36        System.out.println("Total Payments:      $" + rtotPayment);
37        System.out.println("Total Interest:      $" + rtotInterest);
38    }
39}
```