

Java
Nested for loop worksheet #2

Name –

Trace the following code segments **making a column for each variable and show the output**. You may round values to the nearest penny. Look up explanations of these interest calculation formulas on the Web if necessary. You must understand these algorithms!

```
public class Worksheet
{
    public static void main (String [] args )
    {
        // balance = $500
        // number of years that your money is saved in the bank = 4
        // interest rate is 5%

        System.out.println (compoundAnnually (500, 4, 5));

        // balance = $100
        // number of years that your money is saved in the bank = 1
        // interest rate is 5%
        // interest is compounded each month (total of 12 months)

        System.out.println (compoundMonthly (100, 1, 5, 12));
    }

    public static double compoundAnnually (double balance, int years, int r)
    {
        for (int i = 1; i <= years; i++)           i      balance      years      r
        {
            balance += (balance * r) / 100.0;
        }

        return balance;
    }

    public static double compoundMonthly (double bal, int yrs, int r, int p)
    {
        for (int i = 1; i <= yrs; i++)           i      j      bal      yrs      r      p
        {
            for (int j = 1; j <= p; j++)
            {
                bal += bal * r / 100 / p;
            }
        }

        return bal;
    }
}
```