//2.12

public static void main(String[] args) {

// TODO code application logic herepublic static void main(String[] args) {

//AP(arithmetic progression，等差數列)

Scanner input = new Scanner(System.in);

double a1, d, n;

System.out.println("Enter a1 , difference , and the number : "); //difference 是公差

a1 = input.nextDouble();

d = input.nextDouble();

n = input.nextDouble();

Double AP = a1 + (n - 1) \* d;

System.out.println("When a1 =" + a1 + " and difference = " + d + ", a" + (int) (n) + " = " + AP);

}//2.13

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.println("Enter the monthly saving amount:");

double MonthlySavingAmount = input.nextDouble();

double M1 = MonthlySavingAmount \* (1 + 0.003125);

double M2 = (MonthlySavingAmount + M1) \* (1 + 0.003125);

double M3 = (MonthlySavingAmount + M2) \* (1 + 0.003125);

double M4 = (MonthlySavingAmount + M3) \* (1 + 0.003125);

double M5 = (MonthlySavingAmount + M4) \* (1 + 0.003125);

double M6 = (MonthlySavingAmount + M5) \* (1 + 0.003125);

System.out.println("After the first month , the account value is " + M1);

System.out.println("After the second month , the account value is " + M2);

System.out.println("After the third month , the account value is " + M3);

System.out.println("After the forth month , the account value is " + M4);

System.out.println("After the fifth month , the account value is " + M5);

System.out.println("After the sixth month , the account value is " + M6);

//2.19

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

double x1, y1, x2, y2, x3, y3;

System.out.println("Enter three points for a triangle:");

x1 = input.nextDouble();

y1 = input.nextDouble();

x2 = input.nextDouble();

y2 = input.nextDouble();

x3 = input.nextDouble();

y3 = input.nextDouble();

double side1 = Math.sqrt(Math.pow(x1 - x2, 2) + Math.pow(y1 - y2, 2));

double side2 = Math.sqrt(Math.pow(x1 - x3, 2) + Math.pow(y1 - y3, 2));

double side3 = Math.sqrt(Math.pow(x2 - x3, 2) + Math.pow(y2 - y3, 2));

double HalfSumSides = (side1 + side2 + side3) / 2;

double area = Math.sqrt(HalfSumSides \* (HalfSumSides - side1) \* (HalfSumSides - side2) \* (HalfSumSides - side3));

System.out.println("The area of the triangle is " + area);

}

//2.20

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

double balance, Annual\_Interest\_Rate;

System.out.println("Enter balance and interest rate (e.g., 3 for 3 %) :");

balance = input.nextDouble();

Annual\_Interest\_Rate = input.nextDouble();

double interest = balance \* (Annual\_Interest\_Rate / 1200);

System.out.println("The interest is " + interest);

}

//2.21

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

double InvestmentAmount;

System.out.println("Enter investment amount:");

InvestmentAmount = input.nextDouble();

double Annual\_Interest\_Rate\_in\_Percentage;

System.out.println("Enter annual interest rate in percentage:");

Annual\_Interest\_Rate\_in\_Percentage = input.nextDouble();

double NumberOfYears;

System.out.println("Enter number of years:");

NumberOfYears = input.nextDouble();

double FutureInvestmentValue = InvestmentAmount \* Math.pow(1 + (Annual\_Interest\_Rate\_in\_Percentage / 1200) ,NumberOfYears \* 12);

System.out.println("Accumulated value is $ "+FutureInvestmentValue);

}