**RECURSION QUESTION**

**PROBLEM-1:POWER OF THREE**

**CODE:**

**class PowerOfThree {**

**public static void main(String[] args) {**

**int num=27;**

**System.out.println(isPowerOfThree(num));**

**}**

**static boolean isPowerOfThree(int n) {**

**if(n<1){**

**return false;**

**}**

**if(n == 1){**

**return true;**

**}**

**if(n%3 == 0){**

**return isPowerOfThree(n/3);**

**}**

**return false;**

**}**

**}**

**PROBLEM-2:POWER OF FOUR**

**CODE:**

**public class PowerOfFour {**

**public static void main(String[] args) {**

**int num = 64;**

**System.out.println(isPowerOfFour(num));**

**}**

**static boolean isPowerOfFour(int n){**

**if(n<1){**

**return false;**

**}**

**if(n == 1){**

**return true;**

**}**

**if(n%4 == 0){**

**return isPowerOfFour(n/4);**

**}**

**return false;**

**}**

**}**

**PROBLEM-3: SUPER POWER**

**CODE:**

**class** Solvee {

**static** **int** *base* = 1337;

**public** **static** **int** superPow(**int** a, **int**[] b) {

**return** *getResult*(a, b, b.length);

}

**private** **static** **int** getResult(**int** a, **int**[] b, **int** length) {

**if** (length == 0) **return** 1;

**int** last = b[length - 1];

**int** part1 = *myPow*(a, last);

**int** part2 = *myPow*(*getResult*(a, b, length - 1), 10);

**return** part1 \* part2 % *base*;

}

**private** **static** **int** myPow(**int** a, **int** k) {

**if** (k == 0) **return** 1;

**int** res = 1;

a = a % *base*;

**for** (**int** i = 1; i <= k; i++) {

res = res \* a;

res= res % *base*;

}

**return** res;

}

**public** **static** **void** main(String args[]) {

**int** a=5;

**int**[] b= {1,2,3};

**int** length =4;

**int** k=5;

System.***out***.println(*superPow*(a,b));

}

}

**PROBLEM-4:MISSING NUMBER**

**CODE:**

**class** Solution {

**static** **int** missingNumber(**int** array[], **int** n) {

**int** expectedSum = (n \* (n + 1)) / 2;

**return** *findMissing*(array, 0, expectedSum);

}

**static** **int** findMissing(**int** array[], **int** index, **int** expectedSum) {

**if** (index == array.length) {

**return** expectedSum;

}

**int** currentSum = 0;

**for** (**int** i = index; i < array.length; i++) {

currentSum += array[i];

}

**return** expectedSum - currentSum;

}

**public** **static** **void** main(String args[]) {

**int** array[]= {1,2,3,5};

**int** n=5;

System.***out***.println(*missingNumber*(array,n));

}

}