1. Write a Python program to check if the given number is a Disarium Number?

**Ans: def calculateLength(n):**

**length = 0;**

**while(n != 0):**

**length = length + 1;**

**n = n//10;**

**return length;**

**num = 175;**

**rem = sum = 0;**

**len = calculateLength(num);**

**n = num;**

**while(num > 0):**

**rem = num%10;**

**sum = sum + int(rem\*\*len);**

**num = num//10;**

**len = len - 1;**

**if(sum == n):**

**print(str(n) + " is a disarium number");**

**else:**

**print(str(n) + " is not a disarium number");**

1. Write a Python program to print all disarium numbers between 1 to 100?

**Ans: def Length(n):**

**length = 0;**

**while(n != 0):**

**length = length + 1;**

**n = n//10;**

**return length;**

**def sumdigit(num):**

**rem = sum = 0;**

**len = Length(num);**

**while(num > 0):**

**rem = num%10;**

**sum = sum + (rem\*\*len);**

**num = num//10;**

**len = len - 1;**

**return sum;**

**result = 0;**

**print("Disarium numbers between 1 and 100 are");**

**for i in range(1, 101): # printing disarium numbers**

**result = sumdigit(i);**

**if(result == i):**

**print(i),**

1. Write a Python program to check if the given number is Happy Number?

**Ans: def isHappyNumber(num):**

**rem = sum = 0;**

**while(num > 0):**

**rem = num%10;**

**sum = sum + (rem\*rem);**

**num = num//10;**

**return sum;**

**num = 82;**

**result = num;**

**while(result != 1 and result != 4):**

**result = isHappyNumber(result);**

**if(result == 1):**

**print(str(num) + " is a happy number");**

**elif(result == 4):**

**print(str(num) + " is not a happy number");**

1. Write a Python program to print all happy numbers between 1 and 100?

**Ans: def isHappyNumber(num):**

**rem = sum = 0;**

**while(num > 0):**

**rem = num%10;**

**sum = sum + (rem\*rem);**

**num = num//10;**

**return sum;**

**print("List of happy numbers between 1 and 100: ");**

**for i in range(1, 101):**

**result = i;**

**while(result != 1 and result != 4):**

**result = isHappyNumber(result);**

**if(result == 1):**

**print(i),**

**print(" "),**

1. Write a Python program to determine whether the given number is a Harshad Number?

**Ans: num = 156;**

**rem = sum = 0;**

**n = num;**

**while(num > 0):**

**rem = num%10;**

**sum = sum + rem;**

**num = num//10;**

**if(n%sum == 0):**

**print(str(n) + " is a harshad number");**

**else:**

**print(str(n) + " is not a harshad number");**

1. Write a Python program to print all pronic numbers between 1 and 100?

**Ans: def isPronicNumber(num):**

**flag = False;**

**for j in range(1, num+1):**

**if((j\*(j+1)) == num):**

**flag = True;**

**break;**

**return flag;**

**print("Pronic numbers between 1 and 100: ");**

**for i in range(1, 101):**

**if(isPronicNumber(i)):**

**print(i),**

**print(" "),**