Q1 : sin(x) = x-x**3/3! + x**5/5! - x**7/7! .... Q2 : find a number is prime number or not. Q3 : Palindrome

In [12]:
```
#def fact(x):
#    return 1 if(x==0 or x==1) else x * fact(x-1)

def logic(n):
    term,termcounter = "x",3
    for i in range(1,n):
        sign = str((-1)**i).replace("1","") if (-1)**i == -1 else "+"
        term += f"{sign}x^{termcounter}/{termcounter}!"
        termcounter+=2

    print(term)

if __name__ == "__main__":
    logic(int(input("Enter the number of terms : ")))
```

```
Enter the number of terms7
x-x^3/3!+x^5/5!-x^7/7!+x^9/9!-x^11/11!+x^13/13!
```

In [24]:
```
# Prime Number
def number(n):
    flag = 0
    for i in range(2,n):
        if n%i == 0:
            flag = 1
            print("Divisible by",i)
            break
        else:
            flag = 0
    print("Composite Number" if flag == 1 else "Prime Number")

# number(25)
number(int(input("Enter the number : ")))
```

```
Enter the number : 25
Divisible by 5
Composite Number
```

In [27]:
```
# palindrome
def palindrome(txt):
    print("palindrome" if txt.lower()[::-1]==txt.lower() else "not a p
palindrome(input("Enter the text : "))
```

```
Enter the text : MAlayalam
palindrome
```

In [ ]:
```

```