

```
Series[1 / (1 - x), {x, 0, 10}]
```

$$1 + x + x^2 + x^3 + x^4 + x^5 + x^6 + x^7 + x^8 + x^9 + x^{10} + O[x]^{11}$$

```
Series[1 / (1 - a x), {x, 0, 10}]
```

$$1 + a x + a^2 x^2 + a^3 x^3 + a^4 x^4 + a^5 x^5 + a^6 x^6 + a^7 x^7 + a^8 x^8 + a^9 x^9 + a^{10} x^{10} + O[x]^{11}$$

```
Series[x / (1 - x)^2, {x, 0, 10}]
```

$$x + 2 x^2 + 3 x^3 + 4 x^4 + 5 x^5 + 6 x^6 + 7 x^7 + 8 x^8 + 9 x^9 + 10 x^{10} + O[x]^{11}$$

```
Series[a / (1 - x) + d x / (1 - x)^2, {x, 0, 10}]
```

$$a + (a + d) x + (a + 2 d) x^2 + (a + 3 d) x^3 + (a + 4 d) x^4 + (a + 5 d) x^5 + (a + 6 d) x^6 + (a + 7 d) x^7 + (a + 8 d) x^8 + (a + 9 d) x^9 + (a + 10 d) x^{10} + O[x]^{11}$$

```
Series[1 / (1 - x - x^2), {x, 0, 10}]
```

$$1 + x + 2 x^2 + 3 x^3 + 5 x^4 + 8 x^5 + 13 x^6 + 21 x^7 + 34 x^8 + 55 x^9 + 89 x^{10} + O[x]^{11}$$

```
Series[1 / (1 - x - x^2 - x^3), {x, 0, 10}]
```

$$1 + x + 2 x^2 + 4 x^3 + 7 x^4 + 13 x^5 + 24 x^6 + 44 x^7 + 81 x^8 + 149 x^9 + 274 x^{10} + O[x]^{11}$$

```
N[100 / 89, 15]
```

1.12359550561798



give me an approximation of the integral of the exponential function from 0 to 10



```
NIntegrate[Exp[x], {x, 0, 10}]
```

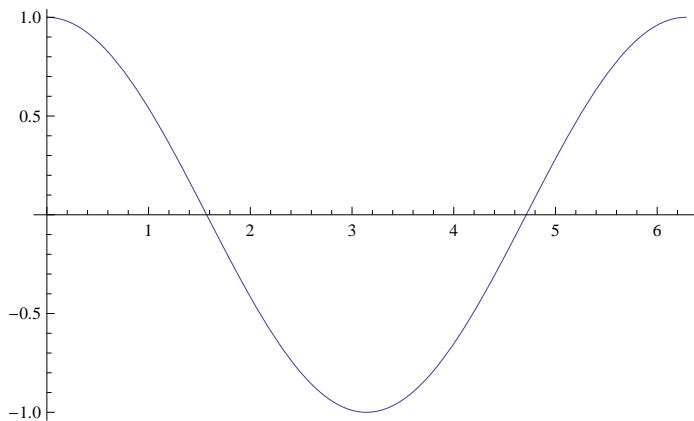
22 025.5



plot the cosine function from 0 to 2 pi



```
Plot[Cos[x], {x, 0, 2 * Pi}]
```



find a generating function for 1, 2, 3, 4, 5, ...

(no interpretations available) ?



what do you actually know? » +

do you ?

↳ Response

Sometimes.

(Do you?)

`Expand[2 (n + 1) ^ 2 - 3 (n + 1) + 1 - (2 (n) ^ 2 - 3 (n) + 1)]`

`- 1 + 4 n`