

## Taylor/Maclaurin

## Maclaurin

1.  $maclaurin \frac{1}{1+x}$

2.  $maclaurin \cos(x)$

3.  $maclaurin \ln(1-x)$

4.  $maclaurin \frac{1}{1+x}$

5.  $maclaurin \cosh(x)$

6.  $maclaurin \sin^2(x)$

7.  $maclaurin 17\cosh(x)$

8.  $maclaurin e^x \sin(x)$

9.  $maclaurin \frac{1}{\cos^2(x)}$

10.  $maclaurin x^3 \sin\left(\frac{x}{2}\right)$

**Answers**

**Taylor/Maclaurin**

**Maclaurin**

$$1. 1 - x + x^2 - x^3 + x^4 + \dots$$

$$2. \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n}}{(2n)!}$$

$$3. -x - \frac{1}{2}x^2 - \frac{1}{3}x^3 - \frac{1}{4}x^4 - \frac{1}{5}x^5 + \dots$$

$$4. 1 - x + x^2 - x^3 + x^4 + \dots$$

$$5. \sum_{n=0}^{\infty} \frac{x^{2n}}{(2n)!}$$

$$6. x^2 - \frac{1}{3}x^4 + \frac{2}{45}x^6 - \frac{1}{315}x^8 + \frac{2}{14175}x^{10} + \dots$$

$$7. 17 + \frac{17}{2}x^2 + \frac{17}{24}x^4 + \frac{17}{720}x^6 + \frac{17}{40320}x^8 + \dots$$

$$8. x + x^2 + \frac{1}{3}x^3 - \frac{1}{30}x^5 - \frac{1}{90}x^6 + \dots$$

$$9. 1 + x^2 + \frac{2}{3}x^4 + \frac{17}{45}x^6 + \frac{62}{315}x^8 + \dots$$

$$10. \frac{1}{2}x^4 - \frac{1}{48}x^6 + \frac{1}{3840}x^8 - \frac{1}{645120}x^{10} + \dots$$