

$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} \dots$$

$$\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} \dots$$

$$e^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!}$$

$i^0 = 1$
$i^1 = i$
$i^2 = -1$
$i^3 = i^2 \cdot i^1 = -i$
$i^4 = i^2 \cdot i^2 = 1$

$$e^{ix} = 1 + ix - \frac{x^2}{2!} - i \frac{x^3}{3!} + \frac{x^4}{4!} + \frac{ix^5}{5!} - \frac{x^6}{6!} - i \frac{x^7}{7!} \dots$$

$$e^{ix} = \cos x + i \sin x$$

$e^{ix}$  CONTIENE TUTTI I TERMINI DI  $\cos x + i \sin x$

ESEMPIO:  $e^{i\pi} = \cos \pi + i \sin \pi = -1$

$$\downarrow$$

$$e^{i\pi} + 1 = 0$$