These formulas will be provided on exam 2

$$e^x = \sum_{k=0}^{\infty} \frac{x^k}{k!}, \quad x \in \mathbb{R}.$$

$$\sin x = \sum_{k=0}^{\infty} (-1)^k \frac{x^{2k+1}}{(2k+1)!}, \quad x \in \mathbb{R}.$$

$$\cos x = \sum_{k=0}^{\infty} (-1)^k \frac{x^{2k}}{2k!}, \quad x \in \mathbb{R}.$$

$$\ln(1+x) = \sum_{k=1}^{\infty} (-1)^{k+1} \frac{x^k}{k}, \quad x \in (-1, 1].$$

The remainder term for the nth Taylor polynomial for a function f expanded about a is

$$R_n(x) = \frac{f^{(n+1)}(c)}{(n+1)!}(x-a)^{n+1}$$

for some c between a and x.