Use series to approximate the value of the following integrals accurate within 0.001.

1. $\int_{0}^{1} \cos \left(x^{3}\right) d x$
2. $\int_{0}^{1 / 4} \frac{1}{1+x^{4}} d x$

Hint: $\frac{1}{1+x^{4}}=\frac{1}{1-\left(-x^{4}\right)}$
3. $\int_{0}^{1} x e^{x^{3}} d x$

