

1. (10 points)

a. Find the Maclaurin series for $f(x) = e^{-x^2}$.

b. Find the Taylor series for $f(x) = x^3 - 4x^2 + 3x + 5$ about $x = 1$.

2. (10 points)

a. Use a Taylor polynomial of degree 4 to approximate $\int_{-\sqrt{\pi}}^{\sqrt{\pi}} \cos(x^2) dx$.

b. Use your calculator to graph the curve

$$C : \quad x = \cos(3t), \quad y = \sin(2t), \quad 0 \leq t \leq 2\pi.$$