Name: _____ Sort #: _____

Worksheet 19

Taylor Series & Polynomials MATH 2205, Fall 2018

1. Find the Taylor polynomial $T_3(x)$ of $f(x) = \ln(x)$ centered at $a = 1$.

2. Find the Taylor series of $f(x) = e^{2x}$ centered at $a = 3$.

3. Use a Taylor series to approximate $\displaystyle\int_0^1 \sin(x^4)\,dx$ to four decimal places.

4. Use a Taylor polynomial with degree $n = 3$ centered at $a = 0$ to approximate $f(x) = e^{x^2}$. Then, determine the accuracy of the approximation by calculating $|R_n(x)|$ on the interval $0 \leq x \leq 0.1$.