Math 2260 Quiz 20

Name _____

Points will be deducted for untidy or disorganized answers

Recall that the Taylor series of f centered at a is given by

$$\sum_{n=0}^{\infty} \frac{f^{(n)}(a)}{n!}(x-a)^n = f(a) + f'(a)(x-a) + \frac{f''(a)}{2!}(x-a)^2 + \cdots + \frac{f^{(n)}(a)}{n!}(x-a)^n + \cdots$$

1. (2 points) Find the Maclaurin series generated by the following functions:

   (a) $f(x) = e^{x/2}$

   (b) $g(x) = x^2 \sin x$

2. (3 points) Find the Taylor series for $f(x) = x^2 - 3x + 7$ centered at the following points.

   (a) $a = 0$ (b) $a = 1$