DIRECTIONS   To receive full credit, you must provide complete legible solutions to the following problems in the space provided. No Attached papers. Transfer all your answers to the space provided.

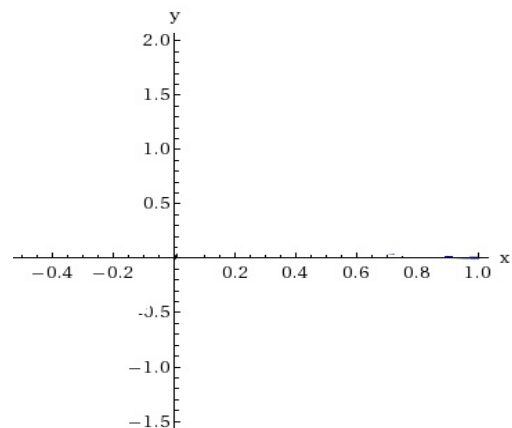1.   Find the Taylor polynomial $T_3(x)$ for the function f centered at the number a.

$$f(x) = \frac{1}{x}, \quad a = 4$$ Ans_____

2.   Find the Taylor polynomial $T_3(x)$ for the function f centered at the number a.

$$f(x) = e^{-4x}\sin(3x), \quad a = 0$$

Ans_____

3. Consider the following function. $f(x) = x \ln(9x), \quad a = 1, \quad n = 3, \quad 0.6 \le x \le 1.4$

a. Approximate f by a Taylor polynomial with degree n at the number a.

Ans_____

b. Use Taylor's Inequality to estimate the accuracy of the approximation $f(x) \approx Tn(x)$ when x lies in the given interval. (Round your answer to four decimal places.)

Ans_____

c. Check your result in part (b) by graphing $|Rn(x)|$.