

Name: _____

Choose D for “None of these”

48. Which of these Maclaurin Series is most appropriate for approximating $e^{-1/2} = \frac{1}{\sqrt{e}}$?

A. $\sum_{k=0}^{\infty} (-1)^k \frac{x^{2k+1}}{(2k+1)!}$

B. $\sum_{k=0}^{\infty} (-1)^k \frac{x^{2k}}{(2k)!}$

C. $\sum_{k=0}^{\infty} \frac{x^k}{k!}$

49. Find the error term $R_n(x)$ from the Taylor Formula for e^x , where x_n is between 0 and x .

A. $R_n(x) = \frac{x^{n+1}}{n!}$

B. $R_n(x) = \frac{e^{x_n}}{(n+1)!} x^{n+1}$

C. $R_n(x) = \frac{1}{e^{x_n/2}(n+1)!} x^n$

50. Use Taylor's Formula to approximate $e^{-1/2} = \frac{1}{\sqrt{e}}$ with an error no greater than $\frac{1}{1000} = 0.001$. (Hint: $-1/2 \leq x_n \leq 0$.)

A. $\frac{1}{\sqrt{e}} \approx 0.604$

B. $\frac{1}{\sqrt{e}} \approx 0.607$

C. $\frac{1}{\sqrt{e}} \approx 0.609$