

Show all work. 10 points.

1) a) Write a function that represents the sum $\sum_{n=1}^{\infty} \frac{2^n x^n}{n!}$.

b) Find the EXACT value of $\sum_{n=1}^{\infty} \left(\frac{1}{2}\right)^{2n}$.

2) Find a Taylor series for $f(x) = \frac{x^2}{4-x}$.