

8E Using the Binomial Expansion for Approximations

$$(1 + x)^n \quad (|x| < 1, n \in \mathbb{R})$$

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1.

a) Find the first four terms of the binomial expansion of $\left(1 - \frac{x}{4}\right)^{10}$, in ascending powers of x

b) Use your expansion to estimate the value of 0.975^{10} , giving your answer to 4 decimal places