

Using Expansions for Estimating

Example

- (a) Find the first 4 terms of the binomial expansion, in ascending powers of x , of

$$\left(1 + \frac{x}{4}\right)^8,$$

giving each term in its simplest form.

(4)

- (b) Use your expansion to estimate the value of $(1.025)^8$, giving your answer to 4 decimal places.

(3)

Test Your Understanding

- (a) Find the first 4 terms of the expansion of $\left(1 + \frac{x}{2}\right)^{10}$ in ascending powers of x , giving each term in its simplest form. **(4)**
- (b) Use your expansion to estimate the value of $(1.005)^{10}$, giving your answer to 5 decimal places. **(3)**