

- 1** Expand $(1 + 3x)^{\frac{2}{3}}$ in ascending powers of x , up to and including the term in x^3 , simplifying the coefficients. [4]

[illegible]

- 2 (a) Expand $\sqrt[3]{1+6x}$ in ascending powers of x , up to and including the term in x^3 , simplifying the coefficients. [4]

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- (b) State the set of values of x for which the expansion is valid. [1]

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- 2 (a) Expand $(2 - 3x)^{-2}$ in ascending powers of x , up to and including the term in x^2 , simplifying the coefficients. [4]

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- (b) State the set of values of x for which the expansion is valid. [1]

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- 2 (a) Expand $(2 - x^2)^{-2}$ in ascending powers of x , up to and including the term in x^4 , simplifying the coefficients. [4]

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- (b) State the set of values of x for which the expansion is valid. [1]

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- 1 Expand $(3+x)(1-2x)^{\frac{1}{2}}$ in ascending powers of x , up to and including the term in x^2 , simplifying the coefficients. [4]

[illegible]

- 3** Find the coefficient of x^3 in the binomial expansion of $(3+x)\sqrt{1+4x}$. [4]

[illegible]

- 2 (a)** Find the coefficient of x^2 in the expansion of $(2x-5)\sqrt{4-x}$. [4]

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- (b) State the set of values of x for which the expansion in part (a) is valid. [1]

(This area contains faint dotted lines for writing.)

- 6** When $(a + bx)\sqrt{1 + 4x}$, where a and b are constants, is expanded in ascending powers of x , the coefficients of x and x^2 are 3 and -6 respectively.

Find the values of a and b .

[6]

[illegible]

- 2 Expand $\sqrt{\frac{1+2x}{1-2x}}$ in ascending powers of x , up to and including the term in x^2 , simplifying the coefficients. [5]

[illegible]