Edexcel (U.K.) Pre 2017

Questions By Topic

C2 Chap05 Binomial Expansion

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1. Find the first 3 terms, in ascending powers of x, of the binomial expansion of

$$(3 - x)^6$$

and simplify each term.

(4)

Q1

(Total 4 marks)

Leave blank

5. Given that $\begin{pmatrix} 40 \\ 4 \end{pmatrix} = \dfrac{40!}{4!\,b!}$,

(a) write down the value of b.

(1)

In the binomial expansion of $(1+x)^{40}$, the coefficients of x^4 and x^5 are p and q respectively.

(b) Find the value of $\dfrac{q}{p}$.

(3)

Leave blank

3. Find the first 4 terms, in ascending powers of x, of the binomial expansion of

$$\left(2 - \frac{1}{2}x\right)^8$$

giving each term in its simplest form.

(4)

Leave blank

1. Find the first 3 terms, in ascending powers of x, of the binomial expansion of

$$(2 - 3x)^5$$

giving each term in its simplest form.

(4)

Q1

(Total 4 marks)

Leave blank

1. Find the first 3 terms, in ascending powers of x, of the binomial expansion of $(3-2x)^5$, giving each term in its simplest form.

(4)

Q1

(Total 4 marks)

Leave blank

1. Find the first 3 terms, in ascending powers of x, in the binomial expansion of

$$(2-5x)^6$$

Give each term in its simplest form.

(4)

Q1

(Total 4 marks)

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1. Find the first 3 terms, in ascending powers of x, of the binomial expansion of $(2+x)^6$, giving each term in its simplest form.

(4)

Q1

(Total 4 marks)

Leave
blank

2. (a) Use the binomial theorem to find all the terms of the expansion of

$$(2 + 3x)^4$$

Give each term in its simplest form.

(4)

(b) Write down the expansion of

$$(2 - 3x)^4$$

in ascending powers of x, giving each term in its simplest form.

(1)

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blank

4. (a) Write down the first three terms, in ascending powers of x, of the binomial expansion of $(1 + px)^{12}$, where p is a non-zero constant.

(2)

Given that, in the expansion of $(1 + px)^{12}$, the coefficient of x is $(-q)$ and the coefficient of x^2 is $11q$,

(b) find the value of p and the value of q.

(4)

Leave blank

4. (a) Find the first 4 terms, in ascending powers of x, of the binomial expansion of $(1+ax)^7$, where a is a constant. Give each term in its simplest form.

(4)

Given that the coefficient of x^2 in this expansion is 525,

(b) find the possible values of a.

(2)

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3. (a) Find the first 4 terms, in ascending powers of x, of the binomial expansion of $(1 + ax)^{10}$, where a is a non-zero constant. Give each term in its simplest form.

(4)

Given that, in this expansion, the coefficient of x^3 is double the coefficient of x^2,

(b) find the value of a.

(2)

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2. (a) Find the first 3 terms, in ascending powers of x, of the binomial expansion of

$$(3+bx)^5$$

where b is a non-zero constant. Give each term in its simplest form.

(4)

Given that, in this expansion, the coefficient of x^2 is twice the coefficient of x,

(b) find the value of b.

(2)

Leave blank

3. (a) Find the first four terms, in ascending powers of x, in the binomial expansion of $(1+kx)^6$, where k is a non-zero constant.

(3)

Given that, in this expansion, the coefficients of x and x^2 are equal, find

(b) the value of k,

(2)

(c) the coefficient of x^3.

(1)

Leave blank

2. (a) Find the first 3 terms, in ascending powers of x, of the binomial expansion of

$$(1 + px)^9,$$

where p is a constant.

(2)

These first 3 terms are 1, $36x$ and qx^2, where q is a constant.

(b) Find the value of p and the value of q.

(4)

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2. (a) Find the first 3 terms, in ascending powers of x, of the binomial expansion of

$$\left(2 + kx\right)^7$$

where k is a constant. Give each term in its simplest form.

(4)

Given that the coefficient of x^2 is 6 times the coefficient of x,

(b) find the value of k.

(2)

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3. (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)

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3. (a) Find the first 4 terms of the expansion of $\left(1+\dfrac{x}{2}\right)^{10}$ 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)