



---

**AS Mathematics Exam Questions by Topic**  
**Chapter 9: The Binomial Expansion**

---

These questions are taken from the Specimen Exam materials and the real 2018 papers for the new syllabus AS and A-level mathematics courses and arranged by chapter of the textbooks by Goldie et al (available here: <https://amzn.to/39umfr5> and <https://amzn.to/3hE8kBL> ). There are a mixture of questions from OCR A, OCR B (MEI) and Edexcel. Although the style of questions varies a little across the exam boards the content of the syllabus is almost identical so these are suitable for students preparing for any exam board.

Free problem sets for all other chapters, as well as video solutions, full past papers and other content for GCSE and A-level maths can be found at:

<https://mathsaurus.com/>

---

OCR B MEI AS 2018 Paper 1 Question 2:

- 2 Find the binomial expansion of  $(3 - 2x)^3$ . [4]
- 

OCR B MEI AS Sample Paper 1 Question 2:

- 2 Find the coefficient of  $x^4$  in the binomial expansion of  $(x - 3)^5$ . [3]
- 

AQA 2018 Paper 2 Question 2:

- 2 Find the coefficient of  $x^2$  in the expansion of  $(1 + 2x)^7$   
Circle your answer. [1 mark]
- 42                      4                      21                      84
-

---

Edexcel AS 2018 Paper 1 Question 11:

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

$$\left(2 - \frac{x}{16}\right)^9$$

giving each term in its simplest form.

(4)

$$f(x) = (a + bx)\left(2 - \frac{x}{16}\right)^9, \text{ where } a \text{ and } b \text{ are constants}$$

Given that the first two terms, in ascending powers of  $x$ , in the series expansion of  $f(x)$  are 128 and  $36x$ ,

- (b) find the value of  $a$ ,

(2)

- (c) find the value of  $b$ .

(2)

---

Edexcel AS Sample Paper 1 Question 7:

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

$$\left(2 - \frac{x}{2}\right)^7, \text{ giving each term in its simplest form.}$$

(4)

- (b) Explain how you would use your expansion to give an estimate for the value of  $1.995^7$

(1)

---

OCR B MEI 2018 Paper 3 Question 6:

- 6 Find the constant term in the expansion of  $\left(x^2 + \frac{1}{x}\right)^{15}$ .

[2]