

BINOMIAL EXPRESSIONS

KCSE QUICK REVISION

*Compilation of Possible Questions in Mathematics Likely to be examined in
KCSE.*

*A Special Analysis of Prediction Questions that may be Tested in KCSE from this
Topic in Form 3.*

MATHEMATICS

SERIES 1

For Marking Schemes

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MWALIMU CONSULTANCY

BINOMIAL EXPRESSION

1. (a) Write down the simplest expansion $(1 + x)^6$
(b) Use the expansion up to the fourth term to find the value of $(1.03)^6$ to the nearest one thousandth.
2. Use binomial expression to evaluate $(0.96)^5$ correct to 4 significant figures.
3. Expand and simplify $(3x - y)^4$ hence use the first three terms of the expansion to approximate the value of $(6 - 0.2)^4$
4. Abdi and Amoiti were employed at the beginning of the same year. Their annual salaries in shillings progressed as follows
Abdi: 60000, 64800, 69600
Amoiti: 60000, 64800, 69984
(a) Calculate Abdi's annual salary increment and hence write down an expression for his annual salary in his n^{th} year of employment?
(b) Calculate Amoiti's annual percentage rate of salary increment and hence write down an expression for her annual salary in her n^{th} year employment?
(c) Calculate the difference in the annual salary for Abdi and Amoiti in their 7th year of employment.
5. Use binomial expression to evaluate
$$2 + \frac{1}{\sqrt{2}}^5 + 2 - \frac{1}{\sqrt{2}}^5$$
6. (a) Expand the expression $1 + \frac{1}{2}x^5$ in ascending powers of x, leaving the coefficients as fractions in their simplest form.
(b) Use the first three terms of the expression in (a) above to estimate the value of $1 + \frac{1}{20}^5$

7. (a) Expand $(a - b)^6$
(b) Use the first three terms of the expansion in (a) above to find the approximate value of $(1.98)^6$
8. Expand $(2 + x)^5$ in ascending powers of x up to the term in x^3 hence approximate the value of $(2.03)^5$ to 4 s.f
9. (a) Expand $(1 + x)^5$
Hence use the expansion to estimate $(1.04)^5$ correct to 4 decimal places
- (b) Use the expansion up to the fourth term to find the value of $(1.03)^6$ to the nearest one thousandth.
10. Expand and Simplify $(1 - 3x)^5$ up to the term in x^3
Hence use your expansion to estimate $(0.97)^5$ correct to decimal places.
11. Expand $(1 + a)^5$
Use your expansion to evaluate $(0.8)^5$ correct to four places of decimal
12. (a) Expand $(1 + x)^5$
(b) Use the first three terms of the expansion in (a) above to find the approximate value of $(0.98)^5$

For Marking Schemes/Answers

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