

# Edexcel AS Mathematics The binomial expansion

## Section 1: Finding binomial expansions

### Exercise level 1

1. Write out the following binomial expansions.

(i)  $(x+1)^6$

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

(iii)  $(2x+1)^4$

(iv)  $(3x-2y)^3$

2. Without using a calculator, evaluate the following binomial coefficients.

(i)  ${}_8C_3$

(ii)  ${}_9C_5$

(iii)  ${}_{12}C_4$

(iv)  ${}_{20}C_{18}$

3. Find

(i) the coefficient of  $x^3$  in the expansion of  $(1+3x)^{10}$

(ii) the coefficient of  $x^5$  in the expansion of  $(1-2x)^9$

(iii) the coefficient of  $x^{11}$  in the expansion of  $(2+x)^{15}$