

- 5 **(a)** Find the coefficient of x^7 in the expansion of $(2x + 3)^9$. **[2]**
- (b)** The following questions are about the binomial expansion of $(1 + x)^{21}$ in ascending powers of x .
- (i)** Two consecutive terms have equal coefficients.
- State the powers of x in these two terms. **[1]**
- (ii)** Given that the terms in x^r and x^{r+5} have equal coefficients, find r . **[2]**