

| Question | | Answer | Marks | AO | Guidance | |
|----------|-----|--|--|---|--|--|
| 4 | (a) | $(2-5x)^5 = 2^5 + {}^5C_1 2^4(-5x) + {}^5C_2 2^3(-5x)^2 + \dots$ $32 - 400x$ $+ 2000x^2$ | M1 A1 A1 [3] | 1.1a 1.1 1.1 | Attempt at least 2 terms – products of binomial coefficients and correct powers of 2 and $-5x$ | Allow $\pm 5x$ – allow expansion of $(1 \pm \frac{5}{2}x)^5$ Do not allow from $+5x$ |
| 4 | (b) | $(1 + 2ax + a^2x^2)(32 - 400x + 2000x^2 + \dots)$ $64a - 400 = 48 \Rightarrow a = \dots$ $a = 7$ | M1* Dep*M1 A1 [3] | 2.1 1.1 2.2a | Expand first bracket, multiply by part (a) to obtain the two relevant terms in x Equate sum of the two relevant terms to 48 and attempt to solve for a Obtain $a = 7$ only | Ignore terms in x^2 M1 only for $2a - 400 = 48$ (oe e.g. with consistent x) |