Question			Answer		Marks	AO	Guidance	
4	(a)		$(2-5x)^5 = 2^5 + {}^5C_1 2^4(-5x) + {}^5C_2 2^3(-5x)^2 + \ldots$		M1	1.1a	Attempt at least 2 terms – products of binomial coefficients and correct powers of 2 and $-5x$	Allow $\pm 5x$ – allow expansion of $\left(1 \pm \frac{5}{2}x\right)^5$
			$32 - 400x$		A1	1.1		
			$+2000x^2$		A1	1.1		Do not allow from $+5x$
					[3]			
4	(b)		$\left(1 + 2ax + a^2x^2\right)\left(32 - 400x + 2000x^2 + \ldots\right)$		M1*	2.1	Expand first bracket, multiply by part (a) to obtain the two relevant terms in x	Ignore terms in x^2
			$64a - 400 = 48 \Rightarrow a = \ldots$		Dep*M1	1.1	Equate sum of the two relevant terms to 48 and attempt to solve for a	**M1 only** for $2a - 400 = 48$ (oe e.g. with consistent x)
			$a = 7$		A1	2.2a	Obtain $a = 7$ only	
					[3]			
5	(a)		$k = 3$		B1 [1]	1.1		
5	(b)		$(1-4)^2 + (2-k)^2 = 13$		M1	1.1a	oe e.g. allow consistent use of square roots – must be using subtraction in brackets	May be implied by one correct value for k
			$k = 0$		A1	1.1		
			$k = 4$		A1	1.1		
					[3]			
5	(c)		$\frac{4-2}{7-1} = \frac{k-5}{4-3}$ oe	or $\frac{5-2}{3-1} = \frac{4-k}{7-4}$ oe	M1	3.1a	or $\frac{5-4}{3-7} = \frac{k-2}{4-1}$ oe – must be consistent application of gradients (allow one sign error)	Any one of these three solutions
			$k = \frac{16}{3}$	$k = -\frac{1}{2}$	A1	1.1	$k = \frac{5}{4}$	
					[2]			

6	(a)		**DR**				