Question	Scheme	Marks	AOs
8(a)	$f(2)=5(2)^3-7(2)^2-8(2)+a=0$ **or** $x-2\overline{)5x^3-7x^2-8x+a}$ with $5x^2+3x-2$ $5x^3-10x^2$ $3x^2-8x$ $3x^2-6x$ $-2x+a$ $-2x+4 \Rightarrow a-4=0$	M1	2.1
	$5\times8-7\times4-8\times2+a=0\Rightarrow a=4$ * **or** $a-4=0\Rightarrow a=4$ *	A1*	1.1b
		(2)	
(b)	$5x^3-7x^2-8x+4=(x-2)(5x^2+3x-2)$	M1 A1	1.1b 1.1b
	$(x-2)(5x-2)(x+1)=0\Rightarrow x=2,\ \frac{2}{5},\ -1$	dM1 A1	1.1b 1.1b
		(4)	
			(6 marks)

Notes

(a)

M1: Attempts $f(2)=0$, $x=2$ embedded in the equation set equal to 0 is sufficient. The =0 may be implied by further work. May also attempt to divide $f(x)$ by $x-2$, proceeding as far as a quadratic quotient and a remainder in the form $a\pm...$which is set equal to 0.

A1*: Achieves $a=4$ with at least one intermediate stage of working and no errors seen, including invisible brackets. If via algebraic division, the quadratic quotient must be $5x^2+3x-2$

(b)

M1: Attempts to find the quadratic factor either via division or inspection.
If via division score for a quadratic factor $(5x^2\pm3x\pm...)$ or via inspection $(5x^2\pm...x\pm2)$

A1: $(5x^2+3x-2)$ which may be seen as the quotient if carrying out algebraic division. Does not need to be written with $(x-2)$

dM1: Attempts to factorise their quadratic, completes the square or uses the formula to solve their quadratic. Usual rules apply. It is dependent on a quadratic factor having been found. They cannot proceed from the cubic directly to a fully factorised expression.

A1: $2,\ \frac{2}{5},\ -1$ only

Note: Answers **only,** with no working, would score no marks for part (b).