Question Number	Scheme	Marks
6.	(a) $p(-2)=2(-2)^3+13(-2)^2-17(-2)-70$ or p(x) = (x+2)(2x^2+9x-35) So (x+2) is a factor of p(x), Hence, by the factor theorem,	M1
	$=-16+52+34-70=0$ p(-2) = 0*	A1
	(b) $(x+2)(2x^2+9x-35)=0$	M1 A1
	$(x+2)(2x-5)(x+7)=0$	M1dep
	$x=-2,\ x=2\frac{1}{2},\ x=-7$	A1 (6)

Notes for Question 6

(a)

M1 for substituting $x=-2$ in the given function

A1cso for $p(-2)=0$ * ($-16+52+34-70$ must be seen)

(b)

M1 for writing p(x) as $(x+2)\times$a quadratic factor with at least 2 terms (by inspection) or dividing to obtain the quadratic factor (not necessarily correct). The quadratic must start with $2x^2$.

A1 for $(x+2)(2x^2+9x-35)$ or just $2x^2+9x-35$

M1dep for solving the quadratic (usual rules)

A1 for the **three** solutions, $x=-2,\ 2\frac{1}{2},\ -7$ Often -2 is missing.

NB: Do not penalise if " = 0" not seen.

Alternative:

(b)

M1 for using the factor theorem again with any one of $x=\pm5,\ \pm7,\ \pm\frac{5}{2},\ \pm\frac{7}{2}$

A1 for a correct result for $x=\frac{5}{2}$ or -7

M1 finding a third value, any valid method

A1 for the **three** solutions, $x=-2,\ 2\frac{1}{2},\ -7$ Often -2 is missing.

NB: No working shown (ie calculator solution):

If all **three** solutions shown and correct 4/4

If one (or more) missing or incorrect 0/4