Question	Scheme	Marks	AOs
1	$\left(g(2)=\right)2^3-(2k+14)\times 2^2+(k+8)\times 2+14=0$	M1	1.1b
	$\Rightarrow 8-8k-56+2k+16+14=0\Rightarrow k=...$	M1	1.1b
	$\left(k=\right)-3$	A1	1.1b
		(3)	

(3 marks)

Notes

Note that the demand of this question is to use the factor theorem.
Attempts to use e.g. long division or grid/tabular methods score no marks.
Ignore any use of e.g. f(x) rather than g(x).

M1: For substituting $x = 2$ into the given function and setting the resulting linear expression in k equal to 0

May be implied by e.g. $8-4(2k+14)+2(k+8)+14=0$

Condone missing brackets and condone a miscopy of the function as long as the intention is clear and $x = 2$ is substituted at least twice.
The "= 0" may be implied by their value of k or by e.g.

$$2^3-(2k+14)\times 2^2+(k+8)\times 2+14\rightarrow -8k+2k=-8+56-16-14$$

Note that attempting $g(-2)=0$ scores M0 but the second M1 can still be scored.

M1: Solves a **linear** equation in k having attempted $g(\pm 2)=0$ which may be implied as above.
Do not be concerned about the processing as long as a value for k is obtained.

A1: Obtains $\left(k=\right)-3$ only from having attempted $g(2)=0$. Do not allow e.g. $\left(k=\right)-\frac{18}{6}$.

Allow slips in working and e.g. missing brackets to be recovered.
Condone e.g. $x=-3$ as long as it has come from a linear equation in k.
Apply isw once a correct answer is seen.

Note that e.g. $2^3-(2k+14)\times 2^2+(k+8)\times 2+14=0\Rightarrow k=-3$

and e.g. $8-4(2k+14)+2(k+8)+14=0\Rightarrow k=-3$

and e.g. $8-4(2k+14)+2(k+8)+14\Rightarrow k=-3$

score M1M1A1