Question Number	Scheme	Marks
1 (a)	$(5,10)$	B1 B1 **(2)**
(b)	Attempts to solve e.g. $-2(x-5)+10...6x \Rightarrow x..."\frac{5}{2}"$	M1
	$x < \frac{5}{2}$ o.e.	A1 **(2)**
(c)	$(7, 30)$	B1ft, B1ft **(2)** **(6 marks)**

Condone missing brackets around pairs of coordinates provided the meaning is clear

(a) If there is a contradiction between coordinates on the graph, by the question and in the main body of the work then the work in the main body of the work takes precedence.

B1: One correct coordinate. Allow as $x=5$ or $y=10$ Do not allow them to be the wrong way round

B1: Both coordinates correct. Allow as $x=5, y=10$

(b) Answers with no working scores 0 marks

M1: Attempts to solve a correct equation or inequality with at least one intermediate stage of working. Allow this mark even if there are additional equations/inequalities. The modulus signs must have been removed.

Alternatively, they may attempt to square both sides and then attempt to solve the quadratic (usual rules apply). If via a calculator the root(s) must be correct (you may need to check these)

Condone slips including when squaring and multiplying out

$|x-5|...3x-5 \Rightarrow x^2-10x+25...9x^2-30x+25 \Rightarrow 0...8x^2-20x \Rightarrow x...$

In either method condone slips in their rearrangement and do not be concerned by the direction of the inequality sign for this mark.

A1: $x < \frac{5}{2}$ o.e. **only**. isw if they attempt to simplify their fraction incorrectly. Must be identified as their only inequality e.g. circling, underlining.

Allow other forms such as $x \in \left(-\infty, \frac{5}{2}\right)$ Do not accept $x \leq \frac{5}{2}$

Do not withhold this mark for incorrect use of inequality signs in earlier work provided the final answer is correct.

(c)

B1ft: One correct coordinate. Allow as $x=7$ or $y=30$

Follow through on their $((a)+2,(a)\times 3)$ Allow as $x=(a)+2$ or $y=(a)\times 3$ (**Does not have to be evaluated**)

B1ft: Correct coordinates $(7, 30)$ Allow as $x=7, y=30$

or correct ft $((a)+2,(a)\times 3)$. Allow as $x=(a)+2,\ y=(a)\times 3$ (**Must be evaluated**)

Question Number	Scheme	Marks
2	$g(x)=\dfrac{2x^2-5x+8}{x-2}$	
(a)	Sets $2x^2-5x+8=\left(Ax+B\right)(x-2)+C$ with an attempt at one constant	M1
	Attempts all 3 constants. E.g. Sets $x=2\Rightarrow C=...,-2B+C=8\Rightarrow B=...$	dM1
	and compares x^2 terms gives $A=...$	
	$2x-1+\dfrac{6}{x-2}$	A1
		(3)
(b)	$\int 2x-1+\dfrac{6}{x-2}\,\mathrm{d}x=x^2-x+6\ln\left(x-2\right)$	M1 A1ft
	$\int_4^8 2x-1+\dfrac{6}{x-2}\,\mathrm{d}x=\left[x^2-x+6\ln\left(x-2\right)\right]_4^8=56+6\ln 6-12-6\ln 2$	
	$=44+6\ln 3$	dM1 A1
		(4)
		(7 marks)

ANSWERS IN (a) of $A=2, B=-5, C=2$, and/or $28+2\ln 3$ in (b) please send to review

(a) **Note that correct values for *A*, *B*, and *C* imply the first two marks**

M1: Attempts to find one of the constants via

- an identity e.g. $2x^2-5x+8=\left(Ax+B\right)(x-2)+C$

  Note that if an identity is used it must be correct. Condone arithmetical slips when evaluating.
  The identity may be implied by correct equations
  e.g. $x^2: A=2,\ x: -2A+B=-5,\ \text{constant}: -2B+C=8$

- division is used look for a quotient as far as $2x$

$$\begin{array}{r} 2x-1 \\ x-2\overline{)2x^2-5x+8} \\ \text{.....} \\ 6 \end{array}$$

Note that the division may appear in many different formats or may be by inspection so $2x$ is sufficient to score this mark.

e.g. $\dfrac{2x^2-5x+8}{x-2}=\dfrac{2x(x-2)+4x-5x+8}{x-2}=2x+\dfrac{-(x-2)-2+8}{x-2}=2x-1+\dfrac{6}{x-2}$

e.g.

	$2x$	-1	
x	$2x^2$	$-x$	6
-2	$-4x$	2	