Question Number	Scheme	Marks
1.(a)	$y = 4x^3 + \frac{3}{2\sqrt{x}} - 8$ $\left(\frac{dy}{dx}\right) = 12x^2 - \frac{3}{4}x^{-\frac{3}{2}}$	M1, A1, A1 **(3)**
(b)	$\int 4x^3 + \frac{3}{2\sqrt{x}} - 8\,dx = x^4 + 3x^{\frac{1}{2}} - 8x + c$	M1, A1, A1 **(3)** **(6 marks)**

Advice for examiners;
If labelled (a), (b) or even (i) and (ii) mark according to the scheme as below.

If it is obvious, i.e marked $\frac{dy}{dx} = ..$ and $\int$ = mark according to the scheme as given no matter what the order

If there are no labels, mark the first answer as their attempt at $\frac{dy}{dx}$ and the second as their attempt at $\int$

If you are not sure then please use review

(a)
M1: Correct attempt at differentiation.

Award for one correct index which must be processed ie $x^3 \to x^2$ (not x^{3-1}) including $-8 \to 0$

A1: One correct and simplified term in x. So, award for sight of $12x^2$ or $-\frac{3}{4}x^{-\frac{3}{2}}$ (or exact equivalent).

A1: $\left(\frac{dy}{dx}\right) = 12x^2 - \frac{3}{4}x^{-\frac{3}{2}}$ or exact simplified equivalent such as $12x^2 - \frac{3}{4x^{\frac{3}{2}}}$ Condone $12x^2 + -\frac{3}{4}x^{-\frac{3}{2}}$.

There must be no extra terms such as + c. ISW after correct answer. There is no need to have the $\frac{dy}{dx}$

(b)
M1: Correct attempt at integration.

Award for achieving one correct index which must be processed.

Look for one of $x^3 \to x^4$, $x^{-\frac{1}{2}} \to x^{\frac{1}{2}}$ or $-8 \to -8x$

A1: Two correct and simplified terms in x

A1: $x^4 + 3x^{\frac{1}{2}} - 8x + c$ or simplified equivalent such as $1x^4 + 3\sqrt{x} - 8x^1 + c$ including the + c

Condone extra spurious notation, e.g. $\int x^4 + 3x^{\frac{1}{2}} - 8x + c$. ISW after correct answer.