Question Number	Scheme	Marks
2(a)	$a = 2$	B1
	$b = -3$	B1
		(2)
(b)	Any two term of $\int \frac{2x^3 - 3x^2 - 32x - 15}{5\sqrt{x}}\,\mathrm{d}x = \int \frac{2}{5}x^{\frac{5}{2}} - \frac{3}{5}x^{\frac{3}{2}} - \frac{32}{5}x^{\frac{1}{2}} - 3x^{-\frac{1}{2}}\,\mathrm{d}x$	M1A1
	$x^n \to x^{n+1}$	M1
	$\frac{4}{35}x^{\frac{7}{2}} - \frac{6}{25}x^{\frac{5}{2}} - \frac{64}{15}x^{\frac{3}{2}} - 6x^{\frac{1}{2}} + c$	A1A1
		(5)
		(7 marks)

(a) If there is a contradiction between their stated values and the embedded values in a cubic expression then the embedded values take precedence.

B1 $a = 2$ which may be embedded

B1 $b = -3$ which may be embedded

(b)

M1 Attempts to write as a sum of terms. Award for any term with a correct index from correct working. The index does not need to be processed.

A1 Any **two** correct unsimplified or simplified terms of the expression $\frac{2}{5}x^{\frac{5}{2}} - \frac{3}{5}x^{\frac{3}{2}} - \frac{32}{5}x^{\frac{1}{2}} - 3x^{-\frac{1}{2}}$ oe eg $0.4x^{\frac{5}{2}} - 0.6x^{\frac{3}{2}} - 6.4x^{\frac{1}{2}} - 3x^{-\frac{1}{2}}$ (indices must be processed)

M1 Increases the power of any of their non-integer terms by 1. ($x^n \to x^{n+1}$) This mark cannot be awarded for just increasing the power by 1 on a numerator or denominator term. The index does not need to be processed.

A1 Any two terms correct unsimplified or simplified (see below). May appear in a list or on separate lines.

A1 $\frac{4}{35}x^{\frac{7}{2}} - \frac{6}{25}x^{\frac{5}{2}} - \frac{64}{15}x^{\frac{3}{2}} - 6x^{\frac{1}{2}} + c$ all on one line (including the constant c and all simplified)

Allow exact equivalents but not rounded decimals so $\frac{4}{35}$ must be written as a fraction.

Accept $\frac{4}{35}x^{\frac{7}{2}} - 0.24x^{\frac{5}{2}} - 4.2\dot{6}x^{\frac{3}{2}} - 6x^{\frac{1}{2}} + c$. Also allow terms written as eg $\frac{4}{35}x^3\sqrt{x}$ Withhold this mark if the final answer has the integral sign and dx around it or any other spurious notation.

Question Number	Scheme	Marks
3(a)	$1.05 = 3p + q$ $1.65 = 5p + q$ e.g. $\Rightarrow 2p = 0.6$ or $\Rightarrow 1.05 = 3p + (1.65 - 5p)$ or $\Rightarrow 1.65 = 5p + (1.05 - 3p)$ $p = 0.3 \quad q = 0.15$	M1 A1A1
		(3)
(b)	$2.5 = "0.3"T + "0.15" \Rightarrow T =$ $T = 7.8$	M1 A1
		(2)
		(5 marks)

(a)

M1 Forms two simultaneous equations (which may be in pence) and proceeds to find a value for p or q
May be implied by a correct p or q (allow sight of 30 or 15).
Also score for an attempt to calculate $\frac{1.65 - 1.05}{5 - 3}$ or equivalent.

A1 $p = 0.3$ or $q = 0.15$ oe

A1 $p = 0.3$ and $q = 0.15$ oe

(b)

M1 Uses their values for p and q with $V = 2.5$ and rearranges to find a value for T. It must come from $\frac{2.5 \pm q}{p}$ which you may need to check on your calculator, allowing for truncation or rounding (eg 8 following correct values for V, p and q)

A1 7.8 cao isw after sight of the correct answer.