Question	Answer	Marks	Partial Marks
2(a)	$\frac{dy}{dx} = 64x - \frac{2x^{-3}}{8}$ oe, isw	**B2**	**B1** for $\frac{dy}{dx} = 64x + kx^{-3}$ or $\frac{dy}{dx} = kx - \frac{2x^{-3}}{8}$ where k is a non-zero constant or **SC1** for $\frac{dy}{dx} = 64x - \frac{2}{8}x^{-3} + c$
	their $\frac{dy}{dx} = 0$ and attempt to solve	**M1**	**FT** *their* derivative providing it has two terms and at least one term is a correct power of x
	(0.25, 4), (–0.25, 4) nfww, isw	**A2**	**A1** for either stationary point correct or for $x = \pm 0.25$ nfww or, if $\frac{dy}{dx} = 64x - 16x^{-3}$, then award **SC2** for $\left(\pm\frac{1}{\sqrt{2}}, \frac{65}{4}\right)$ oe or **SC1** for either of these stationary points or $x = \pm\frac{1}{\sqrt{2}}$ oe

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Question	Answer	Marks	Partial Marks
2(b)	Correct second derivative: $\frac{d^2y}{dx^2} = 64 + \frac{3}{4}x^{-4}$ oe, isw	**M1**	**FT** *their* $\frac{dy}{dx} = mx + nx^{-3}$ where $m \neq 0$ and $n \neq 0$ seen in part (a)
	$64 + \frac{3}{4}\left(\frac{1}{4}\right)^{-4} = 256$ or $64 + \frac{3}{4}\left(\frac{1}{4}\right)^{-4} > 0$ or when $x = 0.25$ $\frac{d^2y}{dx^2} = 256$ or $\frac{d^2y}{dx^2} > 0$ oe **and** minimum [points] oe OR $64 + \frac{3}{4}\left(-\frac{1}{4}\right)^{-4} = 256$ or $64 + \frac{3}{4}\left(-\frac{1}{4}\right)^{-4} > 0$ or when $x = -0.25$ $\frac{d^2y}{dx^2} = 256$ or $\frac{d^2y}{dx^2} > 0$ oe **and** minimum [points] oe OR $\frac{d^2y}{dx^2} = 64 + \frac{3}{4x^4}$ and this is positive for any value of x **and** minimum [points]	**A2**	**dep** on $x = \pm 0.25$ nfww in part **(a)** **A1 dep** on $x = 0.25$ or $x = -0.25$ nfww in part (a) for correctly showing or stating $\frac{d^2y}{dx^2}\left[= 64 + \frac{3}{4x^4}\right]$ is positive
3(a)	$-12 - 69 + 27 + 54 = 0$	**B1**	