(c) has a local minimum when $x=-1$

$\frac{dy}{dx}=0$ and $\frac{d^2y}{dx^2}>0$, when $x=-1$

$\frac{dy}{dx}=x(x+1) \quad =x^2+x$

$x=-1$

$\int (x^2+x)\,dx = \frac{1}{3}x^3+\frac{1}{2}x^2+c \quad \Rightarrow y=\frac{1}{3}x^3+\frac{1}{2}x^2+c$, where c is a constant

$\frac{dy}{dx}=x^2+x$ so... $\frac{d^2y}{dx^2}=2x+1$ when $x-1$ $\frac{d^2y}{dx^2}<0$

maximum

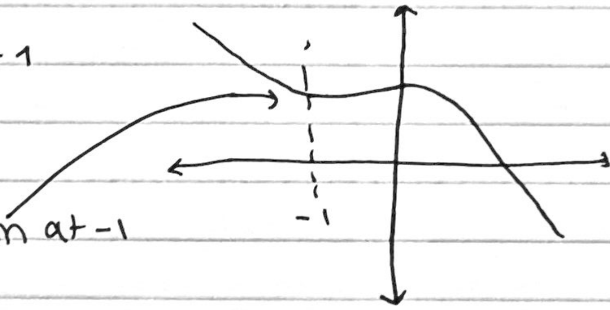
we want a minimum, so we need to make a change

$\frac{d^2y}{dx^2}=-2x+1$

$\int (-2x+1)\,dx = -x^2+x$

$\int (-x^2+x)\,dx = -\frac{1}{3}x^3+\frac{1}{2}x^2+c$ so... $\boxed{y=-\frac{1}{3}x^3+\frac{1}{2}x^2+c}$

$y=-\frac{1}{3}x^3-\frac{1}{2}x^2+1$



minimum at -1