

$$\text{range} = -2 \leq x \leq 2$$

~~$x \leq 2$~~

$$\begin{aligned} \textcircled{b} \text{ i } f'(x) &= 3(x+1)(x-3) \\ &= 3(x^2 - 2x - 3) \end{aligned}$$

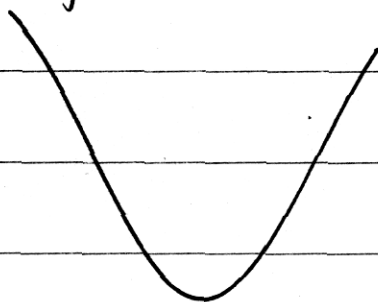
$$f(x) = 3x \times \frac{x^3}{3} - 2 \cdot \frac{x^2}{2} - 3x$$

$$f''(x) = 2x - 2 \quad f''(x) = 0$$

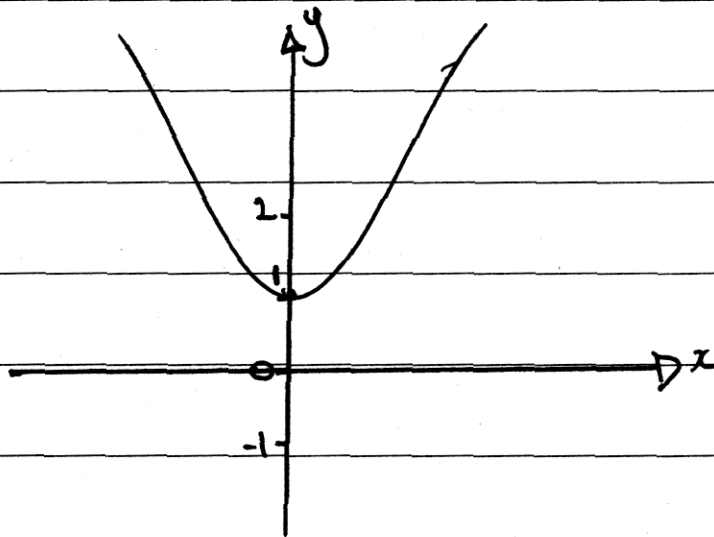
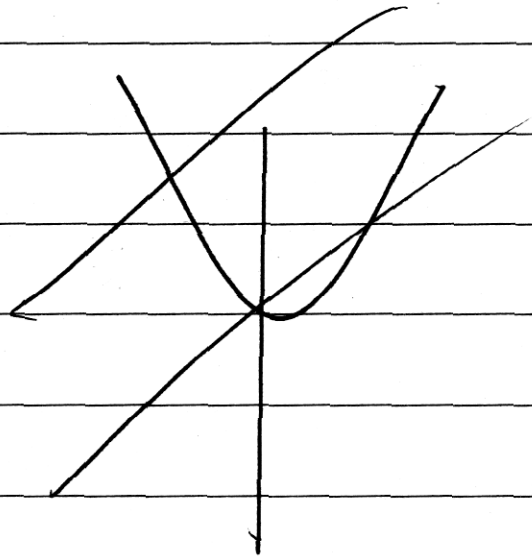
$$0 = 2x - 2$$

$$2 = 2x$$

$$x = 1$$



concave up (+ve)



iii $x \geq 1$ is concave up.