



$$a) \frac{x^2}{2} + y^2 = 8$$

$$V = \int_a^b \pi y^2$$

$$V = \pi \int \frac{x^2}{2} + y^2 = 8$$

$$= \pi \int \frac{2x^3}{3} + 2y$$

$$b) i) \text{ ~~0.25~~ } \text{ ~~0.75~~ } + \text{ ~~0.75~~ }$$

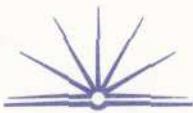
$$\begin{array}{r} 0.75 \quad | \quad 0.75 \\ \hline 0.25 \quad | \quad 2 \\ \hline 0.75 \quad | \quad 1 \\ \hline 0.75 \quad | \quad 2 \\ \hline 0.25 \quad | \quad 2 \end{array}$$

$$= 0.5625$$

$$ii) \text{ ~~0.25~~ } \text{ ~~0.75~~ } = 1$$

$$1 - 0.75$$

$$= 0.25$$



c)

$$x = \frac{t-2}{t+2}$$

t is measured in seconds

i)  $t = 0$

$$= -1$$

ii)  $x = 1 - \frac{4}{t+2}$

$$2x = \frac{t-2}{t+2}$$

$$4 = \frac{t-2}{t+2} \times (t+2)^{-1}$$

iii) no it <sup>accelerations</sup> ~~velocity~~ <sup>does not stop</sup> ~~does not stop~~!

iv)