



$$7a) V = \pi \int_a^b r^2 dy dx$$

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

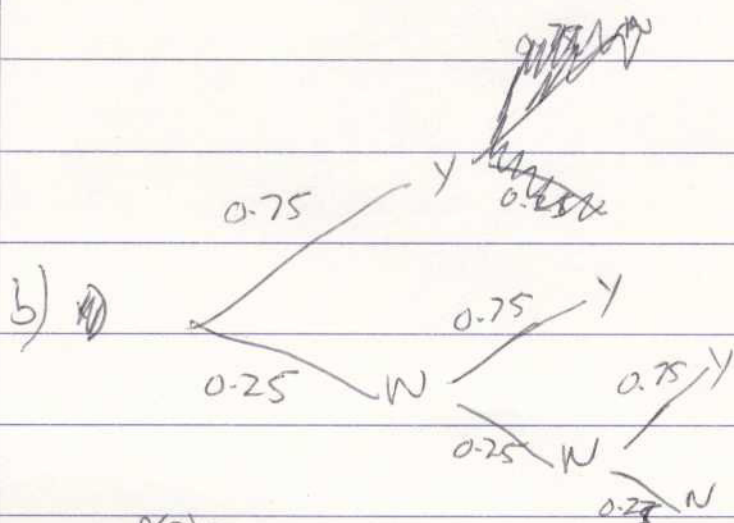
$$y^2 = -\frac{x^2}{2} + 8$$

~~xy~~

$$x^2 + y^2 = 8x$$

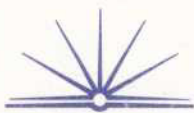
$$x^2 = 16 - 4y^2$$

$$x = \sqrt{16 - 4y^2}$$



P(2) =

$$i) 0.25 \times 0.75 = \frac{3}{16}$$



$$i) P(3) = 0.25 \times 0.25 \times 0.25$$

$$= \cancel{0.25 \times 0.25 \times 0.25} \quad \frac{1}{64}$$

4) i) when $t=0$,

$$x = \frac{0-2}{0+2}$$

$$= \frac{-2}{2}$$

$$= -2$$

displacement is 2 metres when $t=0$

ii)

iii) The particle is not at rest ~~at~~ ever, shown through the time $= 0$, and the displacement from the origin is 2 metres.