



7a.

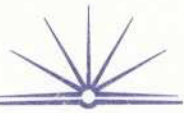
$$\frac{x^2}{2} + y^2 = 8$$

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

$$V = \pi \int y^2 dx$$

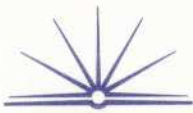
$$= \pi \int \left(-\frac{x^2}{2} + 8 \right) dx$$

$$= \pi \left[-\frac{x^3}{3} + 8x \right] + C$$



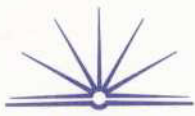
7bi

$$P = \frac{\text{possible outcomes}}{\text{total outcomes}}$$
$$= \frac{0.75}{1}$$



7bii

$\frac{1}{50}$



T_c

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

i.

when $t=0$

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

∴ $= -1$

when $t=0$, displacement $= -1$

7cii.

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

$$\text{velocity} = f'(t)$$

=

7ciii

no

7ciu.

$$-1 < x < 1$$