

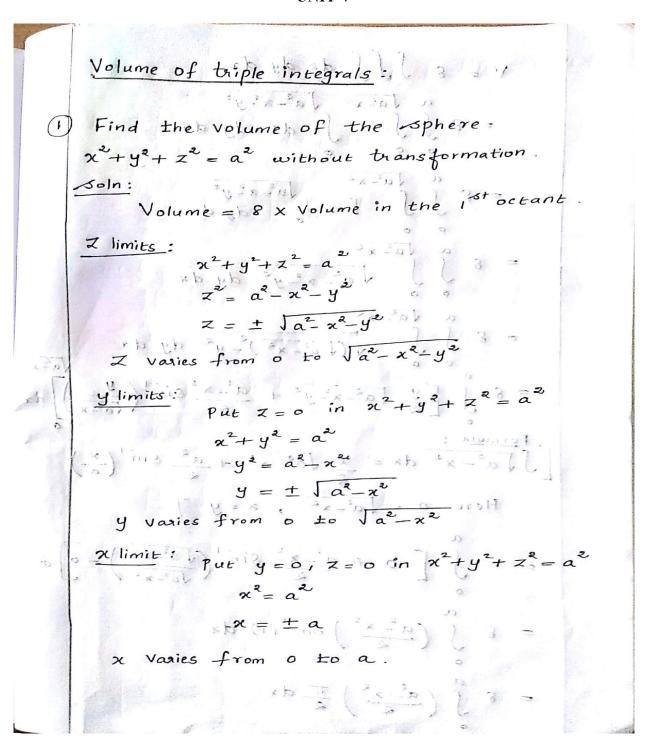
SNS COLLEGE OF TECHNOLOGY



(An Autonomous Institution)

DEPARTMENT OF MATHEMATICS

UNIT V



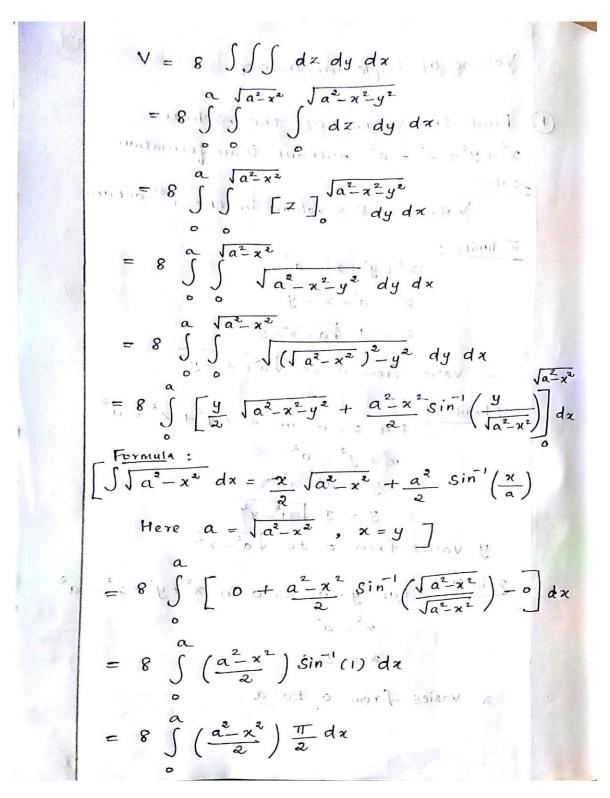


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DEPARTMENT OF MATHEMATICS

$$V = \underbrace{8\pi}_{2\times 2} \int_{0}^{a} (a^{2} - x^{2}) dx$$

$$= 2\pi \left[a^{2} x - \frac{x^{3}}{3} \right]_{0}^{a}$$

$$= 2\pi \left[a^{3} \cdot a - \frac{a^{3}}{3} \right]$$

$$= 2\pi \left[a^{3} - \frac{a^{3}}{3} \right]$$

$$= 2\pi \left[\frac{3a^{3} - a^{3}}{3} \right]$$

$$V = 2\pi \left(\frac{2a^{3}}{3} \right)$$

$$V = \underbrace{4\pi a^{3}}_{3} \text{ cubic units}$$