

For VHF signal broadcasting, _____ km² of maximum service area will be covered by an antenna tower of height 30 m, if the receiving antenna is placed at ground. Let radius of the earth be 6400 km. (Round off to the Nearest Integer) (Take π as 3.14)

$$d = \sqrt{2hR}$$

$$\text{area} = \pi d^2$$

$$\text{Area} = \pi(2hR) = 3.14 \times 2 \times 30 \times 6400 \times 10^3 \cdot \text{m}^2$$

$$= 1205.76 \text{ km}^2$$

$$\approx 1206 \text{ km}^2$$