

1992 AB6

At time t , $t \geq 0$, the volume of a sphere is increasing at a rate proportional to the reciprocal of its radius. At $t=0$, the radius of the sphere is 1 and at $t=15$, the radius is

2. (The volume V of a sphere with a radius r is $V = \frac{4}{3}\pi r^3$.)

(a) Find the radius of the sphere as a function of t .

(b) At what time t will the volume of the sphere be 27 times its volume at $t=0$?