

Expanding Balloon Problem

A spherical balloon is expanding. Suppose that the balloon has already been partly blown up, and the time it took the radius to grow each half centimeter was noted and recorded in the table below.

Time (s)	Radius (cm)
0.00	0
0.06	0.5
0.50	1
1.69	1.5
4.00	2
7.81	2.5
13.50	3
21.44	3.5
32.00	4
45.56	4.5
62.50	5

Determine the volume of the balloon at any given instant from the moment it started to expand.