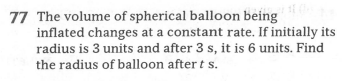
**Expert ID/Name: Nstructive**

**Date: 10-Nov-2020**

****

|  |
| --- |
| Answer for Short / Simple / Direct Question |

|  |
| --- |
| **Tips:**  . Convert the given condition into differential equation.  . |

**Answer:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Given: Initial length of the radius of spherical balloon is  units and after  seconds it is units. Volume of s spherical balloon inflated changes at a constant rate.  To find: The radius of the balloon after  seconds.  Explanation: -  Step1:   |  |  | | --- | --- | | Instruction: | Convert the given condition into differential equation. | | Calculation: | Let the rate of change of the volume of the balloon be .Where is constant.  and be the volume of the balloon. |   Step 2:   |  |  | | --- | --- | | Instruction: | Integrate on both sides . | | Calculation: | Now, at    Also when |   Step 3:   |  |  | | --- | --- | | Instruction: | Put the value of andin equation (1). | | Calculation: | Which is the required radius of the balloon at time . | |
| Verified Answer: - The radius of the balloon after  seconds is .  Hence verified. |