**Expert ID/Name: Nstructive**

**Date: 10-Nov-2020**

**C:\Users\chari\Desktop\76.PNG**

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

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

**Answer:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Given: The rate of increase of the principal is .  To find: The value of if₹  double itself in years.  Explanation: -  Step1:   |  |  | | --- | --- | | Instruction: | Convert the given condition into differential equation. | | Calculation: | Let be the principal and time respectively. It is given that principal increases continuously at the rate of per year.  of. |   Step 2:   |  |  | | --- | --- | | Instruction: | Integrate on both sides . | | Calculation: | Now, at |   Step 3:   |  |  | | --- | --- | | Instruction: | Put the value of in equation (1).  Use the formula: . | | Calculation: | When ,  then    Hence, after years the rate of interest will be . | |
| Verified Answer: - The value of is .  Hence verified. |