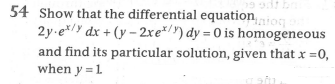
**Expert ID/Name: Nstructive**

**Date:**



**Answer:**

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| **Section 1:** Algorithm/Theorem Reminder / A tip for solving these type of questions |
| **Tips:**   1. **If** is a differential equation and then is a homogeneous differential equation. 2. Recall the method of solving thehomogeneous differential equation ,hence find its general solution. 3. Substitute in the general solution of |

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| **Section 2:** Step-by-step answer |
| Given: Differential equation is  To prove: is a homogeneous differential equation.  Step 1:   |  |  | | --- | --- | | Instruction | Put in . | | Calculation | Hence,  is a homogeneous differential equation. |   Step 2:   |  |  | | --- | --- | | Instruction | Make subject as in | | Calculation |  |   Step 3:   |  |  | | --- | --- | | Instruction | .Put and then differentiate with respect to on both sides.  Substitute the values of and | | Calculation |  |   Step 4:   |  |  | | --- | --- | | Instruction: | Apply the integration on both sides. | | Calculation: |  |   Step 5:   |  |  | | --- | --- | | Instruction: | Now, substitute  in, since . | | Calculation: | Now, take in    Hence the required particular equation is, | |

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| **Section 3:**  Conclusion: is a homogeneous differential equation. |
| Final answer: Particular solution of differential equation  is. |