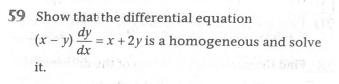
**Expert ID/Name: Nstructive**

**Date:**

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**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. |

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

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| **Section 3:** |
| Conclusion: : General solution of is Hence, proved and verified. |