**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 find: particular solution of , given that .  Step1:   |  |  | | --- | --- | | Instruction: | Make the subject as  in  .  And take and then verify. | | Calculation: | Hence, which is a homogeneous differential equation. |   Step2:   |  |  | | --- | --- | | Instruction | Put and differentiate with respect to on both sides and then substitute the values in | | Calculation |  |   Step 3:   |  |  | | --- | --- | | Instruction | Apply the integration on both sides. | | Calculation | Put  in, since .    Now substitute in    Hence the required particular solution is | |

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| **Section 3:** |
| Conclusion: Particular solution of  is  Hence, verified. |