 Case 2:

Solve the differential equation given when

| Worked solution | Explanation |
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|  | Multiply both sides of the equation by and rearrange to separate the variables. |
|  | Form a definite integral using the variables and the conditions given. Please note that the indefinite integral method works perfectly well from this stage onwards too. |
|  | Balance the integral to form an integral in the form . |
|  | Evaluate the integral. |
|  | Simplify the expression |
| ) | Rearrange the equation to make *y* the subject. |
|  |  |
|  | Determine the function by substituting the values and   into the positive and negative functions and testing which holds true. |
|  |  |