|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. If and , the autonomous differential equation has a solution that is  Select the correct answer.  ​   |  |  |  | | --- | --- | --- | |  | a. | increasing everywhere | |  | b. | decreasing everywhere | |  | c. | increasing if | |  | d. | decreasing if | |  | e. | increasing if |  |  |  | | --- | --- | | *ANSWER:* | c | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2. The autonomous differential equation has a solution that is  Select the correct answer.  ​   |  |  |  | | --- | --- | --- | |  | a. | increasing everywhere | |  | b. | decreasing everywhere | |  | c. | increasing if | |  | d. | decreasing if | |  | e. | increasing if |  |  |  | | --- | --- | | *ANSWER:* | e | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3. Assume that , . The autonomous differential equation has a solution that is  Select the correct answer.  ​   |  |  |  | | --- | --- | --- | |  | a. | increasing everywhere | |  | b. | decreasing everywhere | |  | c. | increasing if | |  | d. | decreasing if | |  | e. | decreasing if |  |  |  | | --- | --- | | *ANSWER:* | d | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4. The autonomous differential equation has a solution that is  Select the correct answer.  ​   |  |  |  | | --- | --- | --- | |  | a. | increasing everywhere | |  | b. | decreasing everywhere | |  | c. | increasing if | |  | d. | decreasing if | |  | e. | increasing if |  |  |  | | --- | --- | | *ANSWER:* | e | |