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| **Question Number** | **I** | **II** | **III** | **IV** | **Total** |
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| **Question I: Define a regular curve. Decide which of the following curves are regular:**  **(b)**  **(c)** |
| **Question II: Compute the arc length of the regular curve Then parametrize it with its arc length function. Compute the arc length of the reparametrized form of at the corresponding points. What do you conclude about the length of and the length of the reparmetrized form of .**  **Question III: Given a unit speed curve**   1. **Find its Frenet-Serret apparatus.**   **(b)Find the equation of the rectifying plane to .**  **(c) Does the curve have a special geometric shape? What is it?**  **(d) Write the vector in terms of , and**  **Question IV: Define a general helix. Show that a unit speed curve is a helix if and only if there is a constant such that .**  Good luck ☺ |
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