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|  | | **SRM Institute of Science and Technology**  **Kattankulathur** |  |
| **DEPARTMENT OF MATHEMATICS** |
| **18MAB101T Calculus and Linear Algebra** |
| **Module–IV** |
|  | | **Tutorial Sheet -2** | **Answers** |
| **1.** | State two properties of the evolute of the curve. | |  |
| **2.** | Find the envelope of the family of straight lines , m being the parameter | | **Ans:+ 4ay = 0** |
| **3.** | Define envelope of a family of curves. | |  |
| **4.** | Find the envelope of the family of straight lines  being the parameters. | |  |
| **5.** | Define involutes and evolutes. | |  |
| **6.** | Find the equation of the circle of curvature at (c, c) on . | |  |
| **7.** | Find the equation of the evolute of the  a) parabola ; b) ellipse ;  c) hyperbola ; d) rectangular hyperbola  and e) curve . | | **Ans:**  **a)**  **b)**  **c)**  **d)**  **e)** |
| **8.** | Show that the evolute of the cycloid  is another equal cycloid. | |  |
| **9.** | Find the evolute of the tractrix . | | **Ans:y = a** |
| **10.** | Show that the evolute of the curve  is a circle. | |  |