

Problem statement The point P travels on the parabola $y = x^2$.

- a) Give parametric formulas for the location of P where the parameter is the first coordinate of the point P .
- b) Give parametric formulas for the location of P where the parameter is the second coordinate of the point P . The parametric formulas will have to be given “piecewise”.
- c) Give parametric formulas for the location of P where the parameter is the angle that the ray from the origin to P makes with the positive x -axis.
- d) Give parametric formulas for the location of P where the parameter is the angle that the ray from the point $(0, 1)$ to P makes with the ray from $(0, 1)$ to the origin.
- e) Give parametric formulas for the location of P where the parameter is the distance from the origin to P . The parametric formulas again will have to be given “piecewise”.