

Parametric Equations # 1 - MA111 - Rickert

- 1 Find a parametric equation for the line $y = 3x - 7$
- 2 A particle travels in a straight line, starting at the point $(-5, 2)$ at time $t = 0$, and passing through $(3, 7)$ at time $t = 1$. Find a parametric equation for the particle's position as a function of t .
- 3 Find a parametric equation for the circle of radius 7 centered at the origin
- 4 Find a parametric equation for the circle of radius 7 centered at the point $(4, -5)$.
- 5 Planet A orbits a star in a circular orbit centered at the star at a distance of 50 and with period 4. Determine a parametric equation for the orbit of planet A.
- 6 Moon M orbits planet A in a circular orbit centered at the center of planet A at a distance of 5 and with period $1/3$. Determine a parametric equation for the orbit of moon M relative to the central star.
- 7 Planet B orbits the same star as planet A, except that planet B orbit the star at a distance of 33 and with period 2.145. Determine a parametric equation for the orbit of planet B.
- 8 Determine the distance between planets A and B as a function of time. Plot a graph of this function.
- 9 Inspect the graph representing the distance between planets A and B to determine when the planets are closest to each other. There are multiple answers to this. Describe as many of them as possible.