

1. Find the x -values where $f(x) = \frac{x}{2} + \sin(x)$ attains its maximum and minimum on the interval $[0, 3]$.
2. Find the extrema of $f(x) = \sqrt{9 - x^2}$ on the interval $[-1, 2]$
3. Find the point on the line $y = -2x + 2$ that is closest to the origin.