

Programming Project Question Set (Phase-1)

1. Minimize
 $f(x) = x^3 + 5x^2 - 3$ in interval $(-1, 1)$
2. Maximize
 $f(x) = (2x - 5)^4 - (x^2 - 1)^3$ in interval $(-10, 0)$
3. Maximize
 $f(x) = 8 + x^3 - 2x - 2e^x$ in interval $(-2, 1)$
4. Minimize
 $f(x) = 3x^2 + \frac{12}{x^3} - 5$ in interval $(0.5, 5)$
5. Maximize
 $f(x) = 4x(\sin x)$ in interval $(0.5, \pi)$
6. Minimize
 $f(x) = 2(x - 3)^2 + e^{0.5x^2}$ in interval $(-2, 3)$
7. Minimize
 $f(x) = 2e^x - x^3 - 10x$ in interval $(0, 4)$
8. Minimize
 $f(x) = x^2 - 10e^{(0.1x)}$ in interval $(-6, 6)$
9. Maximize
 $f(x) = 20 \sin x - 15x^2$ in interval $(-4, 4)$
10. Find at least one root of the following function
 $f(x) = e^x - x^3$