1. (10 points) Find the global extrema of the function $f(x) = x\sqrt{2-x}$ on the closed interval [-2,2].

2. (10 points) Find the global extrema of the function $f(x) = x^2 + \frac{16}{x}$ on the open interval $(0, \infty)$.

1. (10 points) Find the global extrema of the function $f(x) = x^3 - 3x$ on the closed interval [0, 2].

2. (10 points) Find the global extrema of the function $f(x) = xe^{3x}$ on the open interval $(-5, \infty)$.

1. (10 points) Find the global extrema of the function $f(x) = x + \frac{1}{x}$ on the closed interval $\left[\frac{1}{2}, 3\right]$.

2. (10 points) Find the global extrema of the function $f(x) = xe^{-2x}$ on the open interval $(0, \infty)$.

1. (10 points) Find the global extrema of the function $f(x) = \sin^2(x)$ on the closed interval $[\pi, 2\pi]$.

2. (10 points) Find the global extrema of the function $f(x) = 2x^2 + \frac{108}{x}$ on the open interval $(0, \infty)$.