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 $(0, \infty)$.
3. (10 points) Find the global extrema of the function $f(x)=x^{3}-3 x$ on the closed interval $[0,2]$.
4. (10 points) Find the global extrema of the function $f(x)=x e^{3 x}$ on the open interval $(-5, \infty)$.
5. (10 points) Find the global extrema of the function $f(x)=x+\frac{1}{x}$ on the closed interval $\left[\frac{1}{2}, 3\right]$.
6. (10 points) Find the global extrema of the function $f(x)=x e^{-2 x}$ on the open interval $(0, \infty)$.
7. (10 points) Find the global extrema of the function $f(x)=\sin ^{2}(x)$ on the closed interval $[\pi, 2 \pi]$.
8. (10 points) Find the global extrema of the function $f(x)=2 x^{2}+\frac{108}{x}$ on the open interval $(0, \infty)$.
