

Cálculo Diferencial e Integral 2

Respostas à Ficha de Trabalho 10

- (a) Máximo: $f(1, 1, 1) = 3$. Mínimo: $f(-1, -1, -1) = -3$.

(b) Máximo: $f(-2, 0, 3) = 3$. Mínimo: $f(2, 0, -1) = -1$.
- Máximo: $f\left(-\frac{1}{2}, -\frac{1}{2}, -\sqrt{\frac{3}{2}}\right) = f\left(-\frac{1}{2}, -\frac{1}{2}, \sqrt{\frac{3}{2}}\right) = \frac{5}{2}$. Mínimo: $f(1, 1, 0) = -2$.
- Cubo de lado 1 m.
- $\left(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}, 1\right)$; $\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}, 1\right)$; $\left(-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}, -1\right)$; $\left(\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}, -1\right)$.
- $\frac{1}{15} \left((1 + 20\pi^2)^{\frac{3}{2}} - 1 \right)$.
- $(1, 0, 0)$.
- a) $\pi \frac{\sqrt{2}}{2}$.
b) $\frac{2\pi}{3} (2\sqrt{2} - 1)$.
- $\frac{4}{3} \pi a^4$.