

## 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)  $\frac{2\pi}{3} (2\sqrt{2} - 1)$ .
- $\frac{4}{3} \pi a^4$ .