

FÍSICA Y QUÍMICA - 4º ESO - FLUIDOS - HOJA 1

$$\textcircled{1} \quad P = \frac{F}{S} = \frac{15 \text{ N}}{2 \text{ m}^2} = \underline{7,5 \text{ Pa}}$$

$$\textcircled{2} \quad S = 1 \text{ mm}^2 \cdot \frac{1 \text{ m}^2}{10^6 \text{ mm}^2} = 10^{-6} \text{ m}^2$$

$$P = \frac{F}{S} = \frac{50 \text{ N}}{10^{-6} \text{ m}^2} = \underline{5 \cdot 10^7 \text{ Pa}}$$

$$\textcircled{3} \quad S = 10 \text{ mm}^2 \cdot \frac{1 \text{ m}^2}{10^6 \text{ mm}^2} = 10^{-5} \text{ m}^2$$

$$P = \frac{F}{S} = \frac{50 \text{ N}}{10^{-5} \text{ m}^2} = \underline{5 \cdot 10^6 \text{ Pa}}$$

$$\textcircled{4} \quad F = mg = 500 \text{ kg} \cdot 9,8 \text{ m/s}^2 = 4900 \text{ N}$$

$$P = \frac{F}{S} \Rightarrow S = \frac{F}{P} = \frac{4900 \text{ N}}{490 \text{ Pa}} = \underline{10 \text{ m}^2}$$

$$\textcircled{5} \quad F = P \cdot S = 350 \text{ Pa} \cdot 5 \text{ m}^2 = \underline{1750 \text{ N}}$$

$$\textcircled{6} \quad F = mg = 75 \text{ kg} \cdot 9,8 \text{ m/s}^2 = 735 \text{ N}$$

$$S = 2 \cdot 300 \text{ cm}^2 = 600 \text{ cm}^2 \cdot \frac{1 \text{ m}^2}{10^4 \text{ cm}^2} = 0,06 \text{ m}^2$$

$$P = \frac{F}{S} = \frac{735 \text{ N}}{0,06 \text{ m}^2} = \underline{12250 \text{ Pa}}$$

$$\textcircled{7} \quad F = mg = 1500 \text{ kg} \cdot 9,8 \text{ m/s}^2 = 14700 \text{ N}$$

$$P = \frac{F}{S} \Rightarrow S = \frac{F}{P}$$

$$S = \frac{14700 \text{ N}}{175000 \text{ Pa}} = 0,084 \text{ m}^2 \rightarrow \text{Superficie de contacto } \underline{\text{TOTAL}}$$

$$S_{\text{NEUMÁTICO}} = \frac{S}{4} = \frac{0,084}{4} = 0,021 \text{ m}^2 = \underline{\underline{210 \text{ cm}^2}}$$

$$\textcircled{8} \quad S = 4 \cdot 5 \text{ cm}^2 = 20 \text{ cm}^2 \cdot \frac{1 \text{ m}^2}{10^4 \text{ cm}^2} = 2 \cdot 10^{-3} \text{ m}^2$$

$$F = mg = 64 \text{ kg} \cdot 9,8 \text{ m/s}^2 = 627,2 \text{ N}$$

$$P = \frac{F}{S} = \frac{627,2 \text{ N}}{2 \cdot 10^{-3} \text{ m}^2} = \underline{\underline{313600 \text{ Pa}}}$$