

Rješenja - grupa C

① $F_1 = 20\text{ N}$

$l_2 = 24\text{ cm}$

$F_2 = 8\text{ N}$

$l_1 = ?$

$$F_1 l_1 = F_2 l_2 \Rightarrow l_1 = \frac{F_2 l_2}{F_1}$$

$$l_1 = \frac{8\text{ N} \cdot 24\text{ cm}}{20\text{ N}}$$

$l_1 = 9,6\text{ cm}$

② $m_1 = 30\text{ kg} \Rightarrow F_1 = G_1 = 30\text{ kg} \cdot 10 \frac{\text{N}}{\text{kg}} = 300\text{ N}$

$l_1 = 3\text{ m}$

$m_2 = 40\text{ kg} \Rightarrow F_2 = G_2 = 40\text{ kg} \cdot 10 \frac{\text{N}}{\text{kg}} = 400\text{ N}$

$l_2 = ?$

$$F_1 l_1 = F_2 l_2 \Rightarrow l_2 = \frac{F_1 l_1}{F_2}$$

$$l_2 = \frac{300\text{ N} \cdot 3\text{ m}}{400\text{ N}}$$

$l_2 = 2,25\text{ m}$

③ (a) $11,5\text{ kPa} = 11500\text{ Pa}$

(b) $133000\text{ Pa} = 1,33\text{ bara}$

(c) $1,2\text{ bara} = 120000\text{ Pa}$

(d) $6\text{ hPa} = 600\text{ Pa}$

(e) $32000\text{ Pa} = 320\text{ hPa}$

④ $F_1 = 20\text{ N}$

$l_1 = 10\text{ cm}$

$l_2 = 8\text{ cm}$

$F_2 = ?$

$$F_1 l_1 = F_2 l_2$$

$$F_2 = \frac{F_1 l_1}{l_2}$$

$$F_2 = \frac{20\text{ N} \cdot 10\text{ cm}}{8\text{ cm}}$$

$$F_2 = \frac{200\text{ N}}{8}$$

$F_2 = 25\text{ N}$

⑤ $F = G = 250\text{ N}$

$A = 1,5\text{ m}^2$

$p = ?$

$$p = \frac{F}{A}$$

$$p = \frac{250\text{ N}}{1,5\text{ m}^2}$$

$p = 166,67\text{ Pa}$

⑥ $F = G = 950\text{ N}$

$A = 200\text{ cm}^2 = 0,02\text{ m}^2$

$p = ?$

$$p = \frac{F}{A}$$

$$p = \frac{950\text{ N}}{0,02\text{ m}^2}$$

$p = 47500\text{ Pa}$

$$\textcircled{7} \quad m = 120\text{g} = 0,12\text{kg}$$

$$A = 10\text{cm}^2 = 0,001\text{m}^2$$

$$p = ?$$

$$F = G = m \cdot g$$

$$F = 0,12\text{kg} \cdot 10 \frac{\text{N}}{\text{kg}}$$

$$F = 1,2\text{N}$$

$$p = \frac{F}{A}$$

$$p = \frac{1,2\text{N}}{0,001\text{m}^2}$$

$$p = 1200\text{Pa}$$

$$\textcircled{8} \quad m = 0,4\text{kg} \Rightarrow F = G = ?$$

$$p = 70\text{Pa}$$

$$A = ?$$

$$F = G = m \cdot g$$

$$F = 0,4\text{kg} \cdot 10 \frac{\text{N}}{\text{kg}}$$

$$F = 4\text{N}$$

$$A = \frac{F}{p}$$

$$A = \frac{4\text{N}}{70\text{Pa}}$$

$$A = 0,06\text{m}^2$$

$$\textcircled{9} \quad A = 12\text{cm}^2 = 0,0012\text{m}^2$$

$$p = 75\text{kPa} = 75000\text{Pa}$$

$$F = A \cdot p$$

$$F = 0,0012\text{m}^2 \cdot 75000\text{Pa}$$

$$F = 90\text{N}$$

$$\textcircled{10} \quad m = 400\text{g} = 0,4\text{kg}$$

$$G_v = 2,4\text{N}$$

$$F_u = ?$$

$$F_u = G_z - G_v$$

$$G_z = m \cdot g$$

$$G_z = 0,4\text{kg} \cdot 10 \frac{\text{N}}{\text{kg}}$$

$$G_z = 4\text{N}$$

$$F_u = G_z - G_v$$

$$F_u = 4\text{N} - 2,4\text{N}$$

$$F_u = 1,6\text{N}$$
