

## BÀI 12

12.1. A.      12.2. B.

12.3. D.

$$F_{lx} = P = mg$$

$$F_{lx} = k(l - l_0)$$

$$\text{Suy ra : } \frac{l_2 - l_0}{l_1 - l_0} = \frac{m_2}{m_1} \Rightarrow \frac{l_2 - 25,0}{0,5} = \frac{100}{20} = 5$$

$$l_2 = 27,5\text{cm.}$$

12.4. B.

12.5. C

$$k = \frac{P_1}{\Delta l_1} = \frac{10}{0,05} = 200 \text{ N/m.}$$

$$P_1 + P_2 = k\Delta l_2 = 200 \cdot 0,1 = 20 \text{ N.}$$

$$P_2 = 10 \text{ N.}$$

12.6.       $F_{\max} = k(l_{\max} - l_0) = 75(30 - 20) \cdot 10^{-2} = 7,5 \text{ N.}$

12.11. a) Vì F tỉ lệ thuận với  $\Delta l$ .

$$\text{b) } k = \frac{F}{\Delta l} = \frac{5}{9 \cdot 10^{-2}} = 55,5 \approx 56 \text{ N/m.}$$

$$\text{c) } F = \frac{2,8 + 2,1}{2} = 2,45 \approx 2,5 \text{ N.}$$

**12.7.**  $F_1 = k(l_1 - l_0)$  ;  
 $F_2 = k(l_2 - l_0)$  ;  
 $\frac{F_2}{F_1} = \frac{l_2 - l_0}{l_1 - l_0} \Rightarrow \frac{4,2}{1,8} = \frac{21 - l_0}{17 - l_0}$

$\Rightarrow 1,8(21 - l_0) = 4,2(17 - l_0)$

$l_0 = 14 \text{ cm}$

$k = \frac{F_1}{l_1 - l_0} = \frac{1,8}{3 \cdot 10^{-2}} = 60 \text{ N/m.}$

**12.8.**  $F_{lx} = P \Rightarrow k(l - l_0) = mg$

$\frac{l_1 - l_0}{l_2 - l_0} = \frac{m_1}{m_1 + m_2}$ .

Thay số:  $\frac{31 - l_0}{32 - l_0} = \frac{100}{200} = \frac{1}{2} \Rightarrow l_0 = 30 \text{ cm.}$

$k = \frac{m_1 g}{l_1 - l_0} = \frac{0,1 \cdot 10}{1 \cdot 10^{-2}} = 100 \text{ N/m.}$

**12.9.**  $F_{lx} = k(l - l_0) = P \Rightarrow k = \frac{P_1}{l_1 - l_0} = \frac{5}{17 \cdot 10^{-3}} \approx 294 \text{ N/m.}$

$\frac{l_1 - l_0}{l_2 - l_0} = \frac{P_1}{P_2} \Rightarrow P_2 = P_1 \left( \frac{l_2 - l_0}{l_1 - l_0} \right) = 5 \left( \frac{35 - 27}{44 - 27} \right)$

$P_2 = 2,35 \approx 2,4 \text{ N.}$

**12.10.**  $F_{lx} = k(l - l_0) = mg$ .

$\Rightarrow k = \frac{m_1 g}{l_1 - l_0} = \frac{0,50 \cdot 9,8}{(7,0 - 5,0) \cdot 10^{-2}} = 245 \text{ N/m.}$

$\frac{m_1}{m_2} = \frac{l_1 - l_0}{l_2 - l_0} \Rightarrow m_2 = \frac{m_1(l_2 - l_0)}{l_1 - l_0} = \frac{0,50 \cdot 1,5}{2,0}$

$= 0,375 \text{ kg} \approx 0,38 \text{ kg.}$