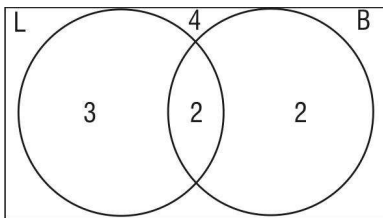


GABARITO COMENTADO

MATEMÁTICA

01. Letra C.



02. Letra A.

$$\begin{array}{r} N \mid 8 \\ \hline 2q \mid q \end{array}$$

• $0 < 2q < 8$ • $N = 10q$

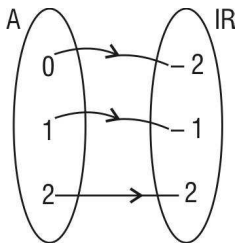
$0 < q < 4$

• para $q = 1 \rightarrow N = 10$

• para $q = 2 \rightarrow N = 20$

• para $q = 3 \rightarrow N = 30$

03. Letra D.



04. Letra E.

- Os divisores comuns são os divisores de 12 \rightarrow 2 e 3
- Os múltiplos comuns são os múltiplos de 24 \rightarrow 24, 48 ...

05. Letra C.

• $x - \frac{2}{5}x = \frac{3}{5}x$

• $\frac{1}{3}$ de $\frac{3}{5}x = \frac{1}{5}x$

• $x - \frac{2}{5}x - \frac{1}{5}x = 10$

$2x = 50 \rightarrow x = 25$ laranjas

• $2 + 5 = 7$

06. Letra B.

$800 = 2^5 \times 5^2$

número de divisores pares positivos = $5 \times (2 + 1) = 15$

07. Letra C.

• $1500 + 1800 + 6300 = 9600$

• $35200 \div 9600 \times 6300 = \text{R\$ } 23.100,00$

08. Letra A.

• À vista: 80% de 120 = 96

• $96 - 60 = 36$

• Juros em reais = 24

• Taxa: $\frac{24}{36} \times 100 = 66,7\%$

09. Letra D.

$\frac{6 - \ell}{\ell} = \frac{6}{18} \Rightarrow 4\ell = 18$

10. Letra E.

Este raio é igual à metade da hipotenusa.

• $a^2 = 5^2 + 12^2 \rightarrow a = 13 \rightarrow r = 6,5$

11. Letra B.

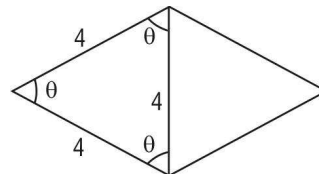
Trabalhando com os ângulos externos:

$50^\circ + 50^\circ + 52x = 360^\circ$

$x = 5$

Total: $2 + 5 = 7$.

12. Letra D.



13. Letra A.

$40^\circ = \frac{2\beta + 60^\circ}{2} \Rightarrow \beta = 10^\circ$

$\alpha = \frac{60^\circ - 20^\circ}{2} = 20^\circ$

14. Letra C.

$\ell + \ell = 11 + 19$

$2\ell = 30 \Rightarrow \ell = 15$

15. Letra E.

$r = p - a$

$2 = 5 - a \therefore a = 3$

24. Letra B.

$$\begin{aligned}
 V_1 &= 15 \text{ L} && \rightarrow V_2 = 20 \text{ L} \\
 P_1 &= 8 \text{ atm} && \rightarrow P_2 = ? \\
 T_1 &= 30^\circ\text{C} = 303 \text{ K} \\
 T &= \text{constante} \\
 8 \times 15^3 &= P_2 \cdot 20^4 \\
 P_2 &= \frac{24}{4} = 6 \text{ atm}
 \end{aligned}$$

25. Letra B.

$$\begin{aligned}
 V &= \text{constante} \\
 P_1 &= 1 \text{ atm} && \rightarrow P_2 = ? \\
 T_1 &= 400 \text{ K} && T_2 = 500 \text{ K} \\
 \frac{1}{400} &= \frac{P_2}{500} \rightarrow P_2 = \frac{5}{4} \rightarrow P_2 = 1,25 \text{ atm}
 \end{aligned}$$

26. Letra D.

$$\begin{aligned}
 P &= \text{constante (isobárica)} \\
 \frac{V}{T} &= K \text{ (constante)}
 \end{aligned}$$

27. Letra D.

$$\begin{aligned}
 P_1 &= 2 \text{ N/m}^2 \rightarrow P_2 = 7 \text{ N/m}^2 \\
 V_1 &= 2 \text{ m}^3 \rightarrow V_2 = 4 \text{ m}^3 \\
 T_1 &= 100 \text{ K} \rightarrow T_2 = ? \\
 \frac{2^1 \times 2}{100} &= \frac{7 \times 4}{T_2} \rightarrow T_2 = 700 \text{ K}
 \end{aligned}$$

28. Letra C.

$$\begin{aligned}
 V_1 &= V_2 = 10 \text{ m}^3 \text{ (constante)} \\
 T_1 &= T_2 \\
 P_1 &= P \rightarrow P_2 = 10 P \\
 n_1 &= n \rightarrow n_2 = ? \\
 \frac{P_1}{n_1} &= \frac{P_2}{n_2} \rightarrow \frac{P}{n} = \frac{10P}{n_2} \\
 n_2 &= 10 n
 \end{aligned}$$

$$\begin{aligned}
 n_1 &= n \rightarrow V_1 = 10 \text{ m}^3 \\
 n_2 &= 10 n \rightarrow V_2 = 100 \text{ m}^3 \\
 \Delta V &= 90 \text{ m}^3
 \end{aligned}$$

29. Letra A.

$$\begin{aligned}
 L_0 &= 2000 \text{ m} && \Delta L = L_0 \cdot \alpha \cdot \Delta\theta \\
 \theta_0 &= 35^\circ\text{C} && \Delta L = 2000 \cdot 2 \times 10^{-5} \cdot (-25) \\
 \theta &= 10^\circ\text{C} && \Delta L = -1 \text{ m} \\
 \Delta L &= ?
 \end{aligned}$$

30. Letra A.

$$\begin{aligned}
 0,1 &= 50 \cdot \alpha \cdot 100 \\
 \alpha &= \frac{1 \times 10^{-1}}{5 \cdot 10^3} \\
 \alpha &= 0,2 \cdot 10^{-4} \\
 \alpha &= 2 \cdot 10^{-5} \text{ } ^\circ\text{C}^{-1}
 \end{aligned}$$