

SOLUÇÕES

FT – PREPARAÇÃO PROVA AFERIÇÃO – A7

PARTE 1

1. $A_{\{OPQM\}} = 5324$. Nota: $A_{\{AEFG\}} = \frac{2420}{8} = 484$ logo $\overline{AE} = \sqrt{484} = 22$.
2. **2.1.** ponto O . Nota: $\overline{NL} - \frac{1}{2}\overline{HC} = \overline{NL} + \frac{1}{2}\overline{CH} = \overline{FJ} + \overline{JO} = \overline{FO}$ e $T_{\overline{FO}}(F) = O$.
2.2. $\frac{1}{4}$. Nota: $\left(\frac{\overline{JL}}{\overline{BH}}\right)^2 = (r_{\text{redução}})^2 = \left(\frac{1}{2}\right)^2 = \frac{1}{4}$.
2.3. (C). Nota: $\text{aresta} = \sqrt[3]{216} = 6 = \overline{EI}$ e $V_{\text{prisma}} = 36 \times 12 \times 12 = 5184$.
3. **3.1. (B).** Nota: $\overline{AC} = 8\sqrt{5}$, $\overline{BC} = 16\sqrt{5}$ e pelo Teorema de Pitágoras $\overline{AB} = 40$.
3.2. $A_{\{ADC\}} = 81$. Nota: $\frac{\overline{AD}}{\overline{CD}} = \frac{\overline{CD}}{\overline{BD}} \Leftrightarrow \overline{CD}^2 = 324 \Rightarrow \overline{CD} = 18$ e $V_{\text{prisma}} = 36 \times 12 \times 12 = 5184$.

PARTE 2

4. $a_n = n^2 + 3n + 3$. Nota: $a_n = (n+3)(n+1) - n$.
5. $S = \left\{ -\frac{1}{4}, \frac{7}{4} \right\}$. Nota: $4 - (4x-3)^2 = -12 \Leftrightarrow (4x-3)^2 = 16 \Leftrightarrow 4x-3 = 4 \vee 4x-3 = -4 \Leftrightarrow \dots$
6. -3^{-135} . Nota: $\left(-\frac{2}{3}\right)^{55} \times \left(\frac{16}{81}\right)^{20} \div \left(\frac{1}{8}\right)^{-45} \times (-2^0)^{101} = \left(-\frac{2}{3}\right)^{55} \times \left[\left(\frac{2}{3}\right)^4\right]^{20} \div \left(\frac{1}{2^3}\right)^{-45} \times 1 = \left(-\frac{2}{3}\right)^{55} \times \left(-\frac{2}{3}\right)^{80} \div \left(\frac{1}{2}\right)^{-135}$
 $= \left(-\frac{2}{3}\right)^{135} \times 2^{-135} = \left(-\frac{3}{2}\right)^{-135} \times 2^{-135} = (-3)^{-135} = -3^{-135}$.
7. (A). Nota: $-\frac{\sqrt[3]{80}}{2} = -\sqrt[3]{10} < -\sqrt[3]{8} < -2$; $4 - \pi \approx 4 - 3,14 = 0,86$; $-\sqrt{1,44} = -\frac{\sqrt{144}}{100} = -\frac{12}{10} = -1,2$; $\frac{1}{5} = \frac{2}{10} = 0,2$.
8. **8.1.** $f(-2) = -6$. Nota: $f(x) = -\frac{5}{4}x - \frac{17}{2}$.
8.2. $\begin{cases} x = 4 \\ y = \frac{5}{4}x + \frac{13}{2} \end{cases}$. Nota: $C(4,0)$; $r: y = \frac{5}{4}x + \frac{13}{2}$.
9. $\begin{cases} x + y = 23 \\ 4x + 10y = 140 \end{cases}$