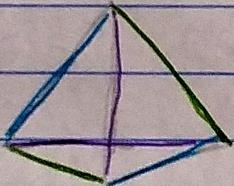


— 11 —

Tópico Básico - Paralelismo e Perpendicularismo  
no espaço

Nome: Bárbara O. Grosse, CT11350.

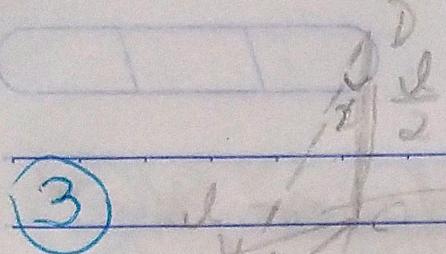
① pares de vetores divergentes = ?



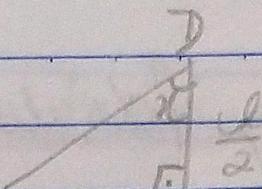
\*\*\* → 3 pares (C)

② se \* A recto ou é paralelo ao plano  $\alpha$ , o que  
significa que pelo menos 1 recto do  
plano  $\alpha$  precisa ser paralelo a  $r$ . (B) (C)  
restante ou é paralelo ou é perpendicular a  $r$ .

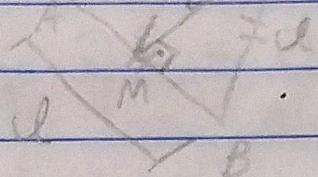
↪ (B)



③



$$\operatorname{tg} x = \frac{\sqrt{3}}{2} : \frac{l}{2}$$



$$y = \frac{\sqrt{3}}{2}$$

$$\operatorname{tg} x = \frac{\sqrt{3} \cdot \frac{l}{2}}{\frac{l}{2}}$$

$$*MDB = x$$

$$*CM = y = \text{altura triângulo equilátero} = \frac{\sqrt{3}}{2}$$

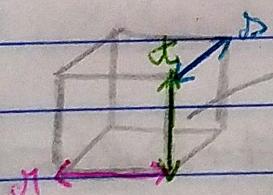
$$\operatorname{tg} x = \sqrt{3}$$

$$x = 60^\circ$$

④

$$*\operatorname{tg} 60^\circ = \sqrt{3}$$

④



It is the midsegment of one of the rectangles of the cube. ④

midsegment of a rectangle = segment that contains the rectangle

- ⑤ I - errado  
II - correto  
III - incorreto.

④

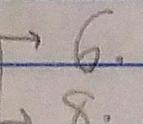
## Morelo Bólio - Poliedros

$$\begin{aligned} ① \quad & f(\text{faces}) = 8 \quad \left\{ \begin{array}{l} V - A + F = 2 \\ 6 - A + 8 = 2 \end{array} \right. \quad \rightarrow A = 14 - 2 \\ & V(\text{vértices}) = 6 \quad \left\{ \begin{array}{l} 6 - A + 8 = 2 \\ 14 = 2 + A \end{array} \right. \quad \rightarrow A = 12 \quad \text{④} \\ & A(\text{lados}) = ? \end{aligned}$$

②  $F = 12 \rightarrow$   folha com 5 lados,  $V = ?$

$$A = F \cdot \frac{n^2}{2} \text{ de lados das folhas}$$

$$V - A + F = 2 \quad \rightarrow \quad V = 2 - 12 + 20 \quad V = 12 \text{ D}$$

③  $F = 14 \rightarrow$   (4 lados) ,  $V = ?$   
 (3 lados)

$$A = \frac{(6, 4)}{2} + \frac{(8, 3)}{2} = \frac{24 + 24}{2} = 48 = 24$$

$$V - A + F = 2 \rightarrow V - 24 + 14 = 2 \rightarrow V = 2 - 14 + 24 = 12$$

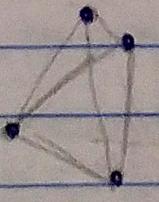
④  $5$  (ângulos ótimos das folhas)  $= (V - 2) \cdot 360^\circ$

$$1800 = 360V - 720$$

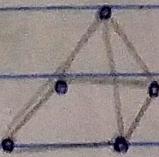
$$360V = 1800 + 720$$

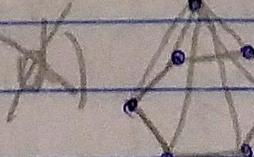
$$V = \frac{2520}{360} = 7$$

360

a)  = 4 vértices

b)  = 6 vértices

c)  = 5 vértices

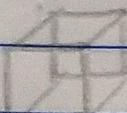
d)  = 20 vértices

Resposta = D

⑤ a) Todos os faces tem o mesmo número de lados.

b) Em todos os vértices, denotar o mesmo número de arestas.

c) Regras sulcágis de Euler ( $V - A + F = 2$ )

⑥  → Cubo: 6 faces quadradas  
12 arestas  
8 vértices (A)

⑦ Icosaedro = 20 faces → 20. Δ (3-lados)

$$A = \frac{20 \cdot 3}{2} = [30]$$

$$\begin{aligned} V - A + F &= 2 \\ V - 30 + 20 &= 2 \\ V &= 2 + 10 = 12 \end{aligned}$$

(C)

⑧ nome | tipo de fde | n° de fdes | A | V |

|            |            |    |    |    |
|------------|------------|----|----|----|
| tetraedro  | triângulos | 4  | 6  | 4  |
| hexaedro   | quadrados  | 6  | 12 | 8  |
| octaedro   | triângulos | 8  | 12 | 6  |
| dodecaedro | pentágonos | 12 | 30 | 20 |
| icosaedro  | triângulos | 20 | 30 | 12 |

Regular = Triângulos = equiláteros  
pentágonos = regulares