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Turma: CTII 348

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Disciplina: Matemática

IFSP - Câmpus Cubatão

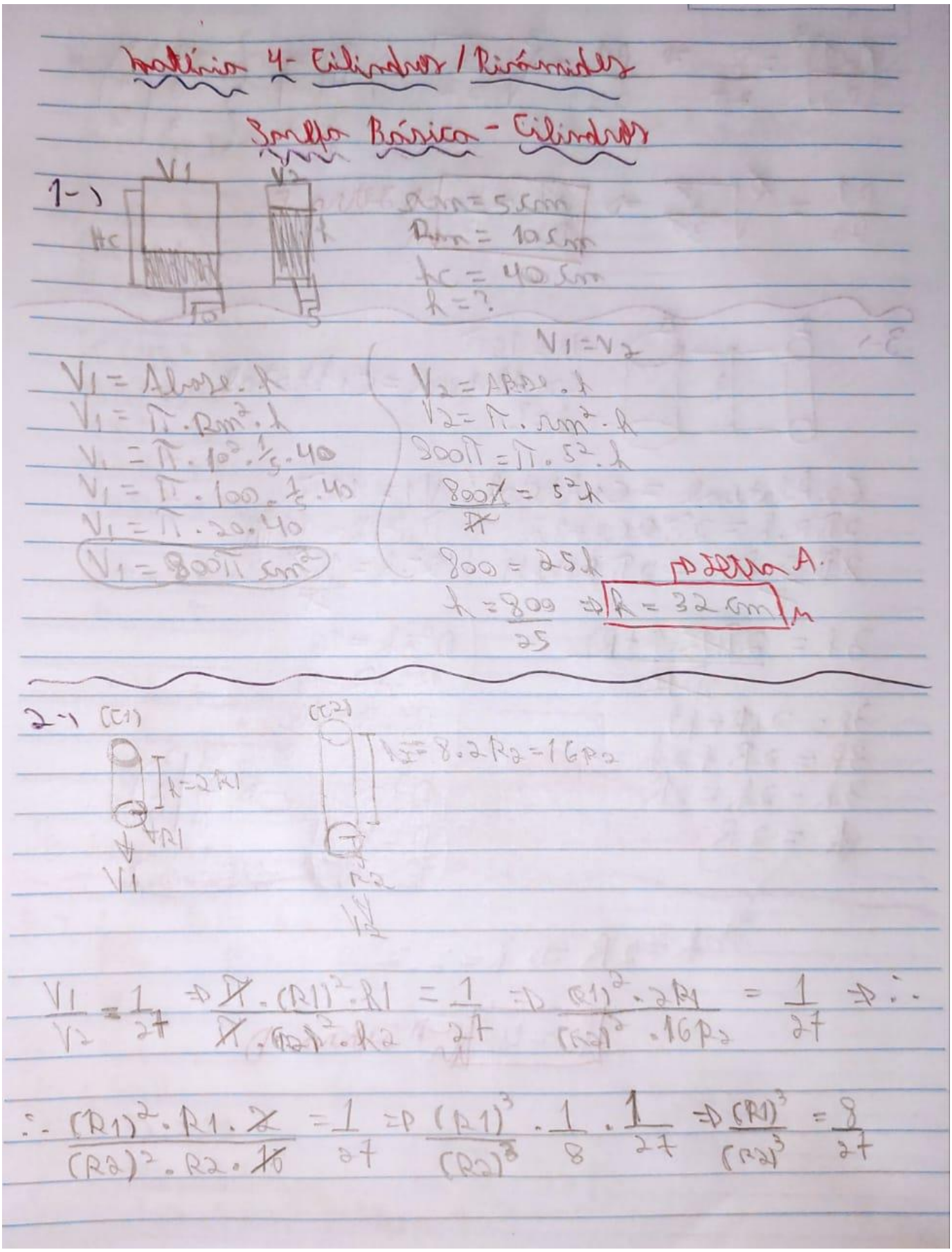
Tarefa Básica 04

Cilindros e Pirâmides

(Fotos nas páginas seguintes)

1ª Lista – Cilindros

Exercícios 1 e 2:



D S T Q Q S S

$$\left(\frac{R1}{R2}\right)^3 = \frac{8}{27} \Rightarrow \frac{R1}{R2} = \sqrt[3]{\frac{8}{27}}$$

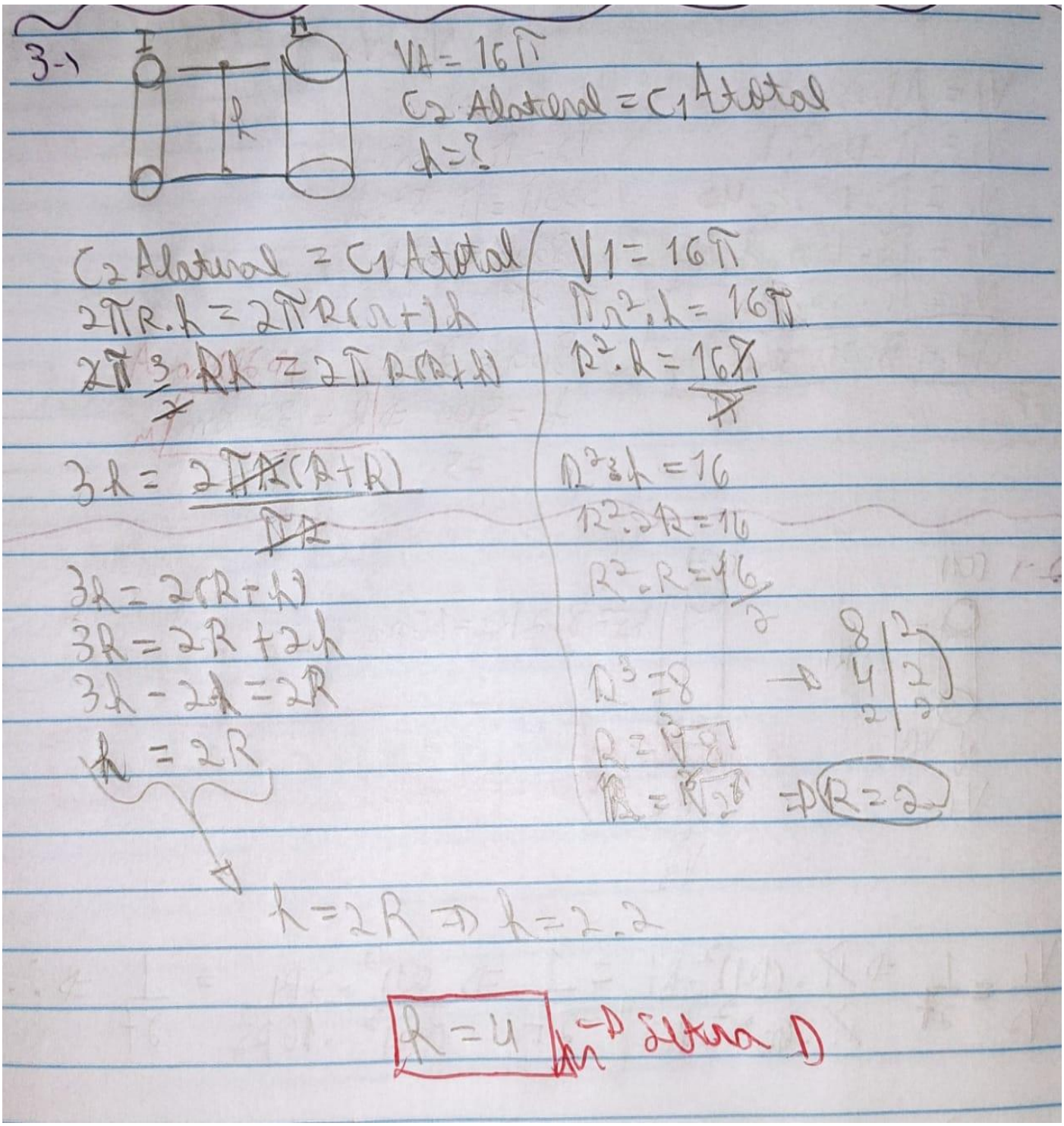
8	2
4	2
2	2
1	

27	3
9	3
3	3
1	

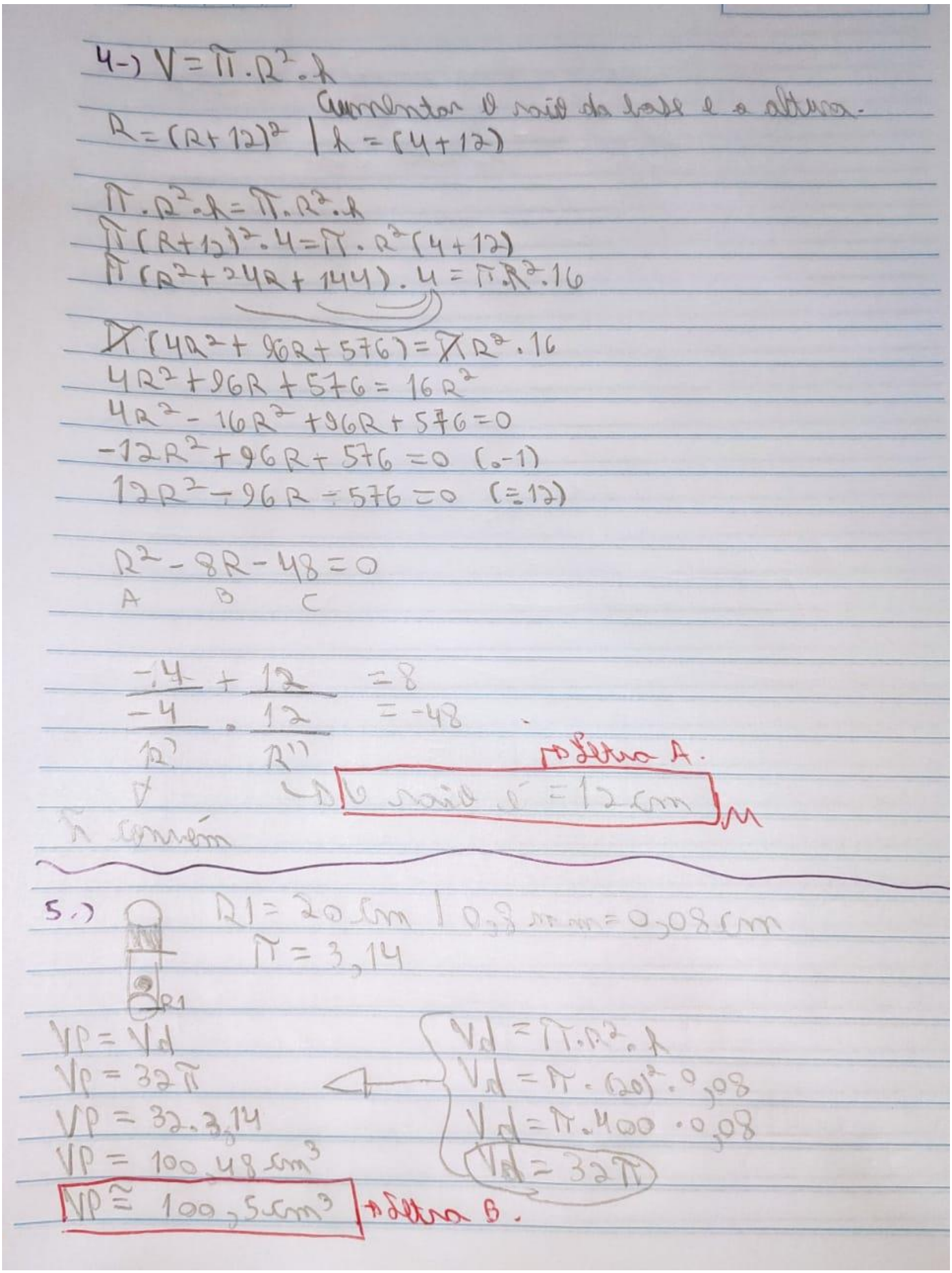
$$\frac{R1}{R2} = \sqrt[3]{\frac{2^3}{3^3}} \Rightarrow \boxed{\frac{R1}{R2} = \frac{2}{3}}$$

→ letra E.

Exercício 3:

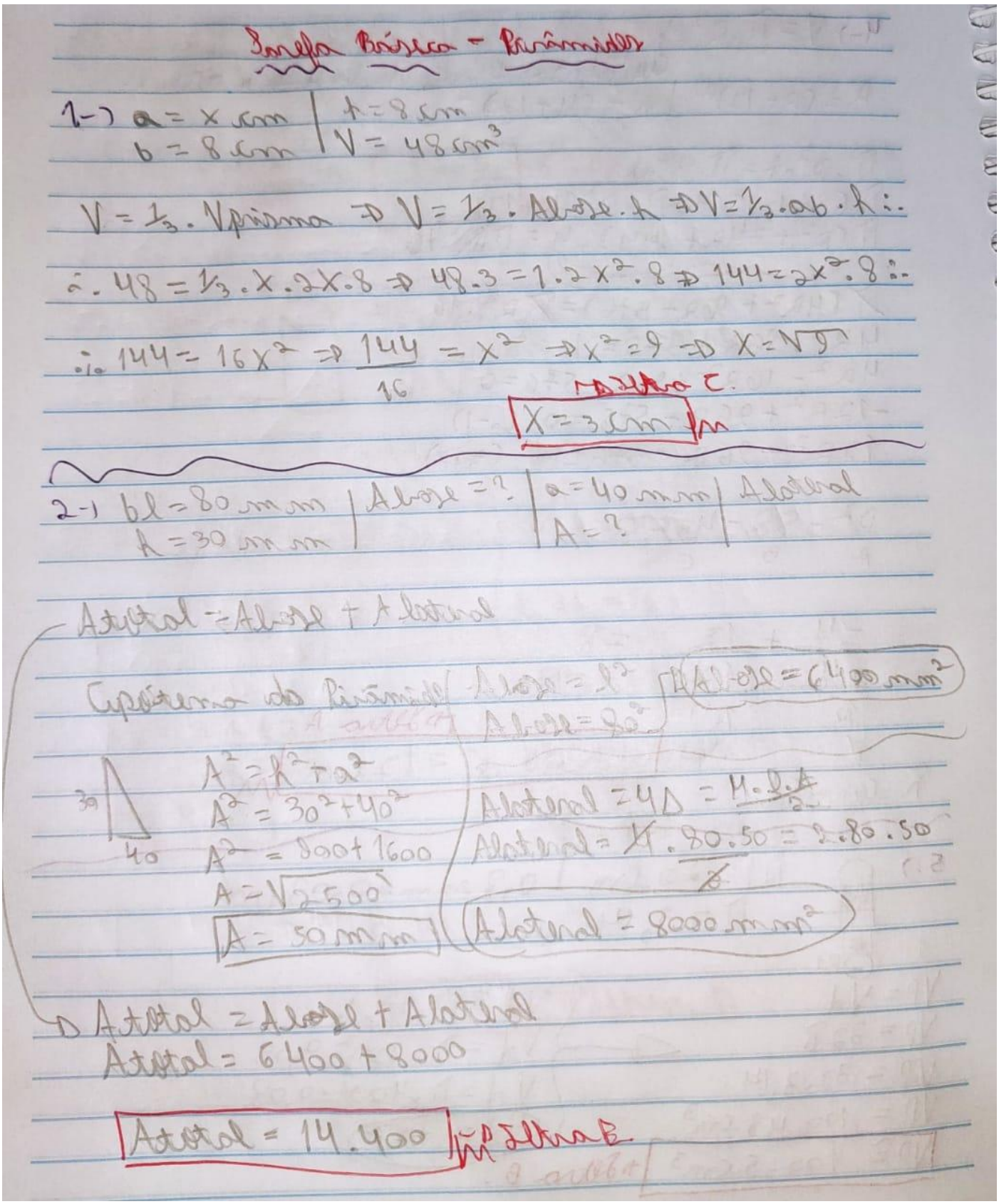

3-)
I
II
h
$V_A = 16\pi$
C_2 Alateral $= C_1$ Atotal
h = ?
C_2 Alateral $= C_1$ Atotal
$2\pi R.h = 2\pi R(R+h)$
$3Rh = 2R(R+h)$
$3h = 2(R+h)$
$3R = 2R + 2h$
$3h - 2h = 2R$
$h = 2R$
$h = 2R \Rightarrow h = 2.2$
$R = 4$ → altura D
$V_1 = 16\pi$
$\pi R^2.h = 16\pi$
$R^2.h = 16$
$R^2.2R = 16$
$R^3 = 8$
$R = \sqrt[3]{8}$
$R = \sqrt[3]{2^3} \Rightarrow R = 2$
8 | 2
4 | 2
2 | 2
1

Exercícios 4 e 5:

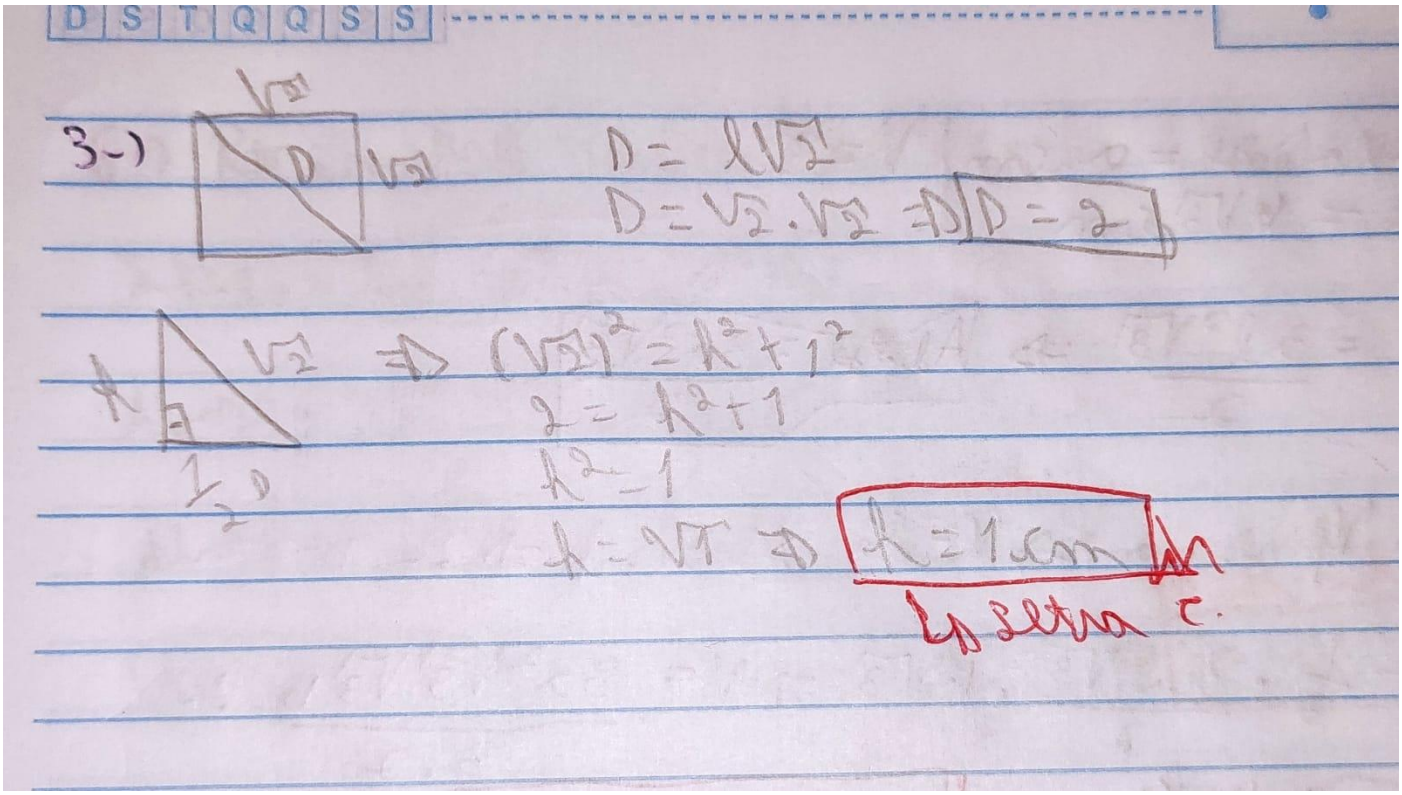


2ª Lista – Pirâmides

Exercícios 1 e 2:



Exercício 3:


3-)
D
$\sqrt{2}$
$\sqrt{2}$
$D = l\sqrt{2}$
$D = \sqrt{2} \cdot \sqrt{2} \Rightarrow D = 2$
h
$\sqrt{2}$
1
$\frac{1}{2}D$
$\Rightarrow (\sqrt{2})^2 = h^2 + 1^2$
$2 = h^2 + 1$
$h^2 = 1$
$h = \sqrt{1} \Rightarrow h = 1\,cm$
Letra C.

Exercícios 4 e 5:

4-) $\text{Aresta Base} = a\ cm$ | $V = ?$

$h = 6\sqrt{3}\ cm$

$A_{hexágono} = \frac{3l^2\sqrt{3}}{2} \Rightarrow \boxed{A_{hexágono} = \frac{3a^2\sqrt{3}}{2}}$

$V = \frac{1}{3} \cdot V_{prisma} \Rightarrow V = \frac{1}{3} \cdot A_{hex} \cdot h \Rightarrow \therefore$

$\therefore = V = \frac{1}{3} \cdot \frac{3a^2\sqrt{3}}{2} \cdot 6\sqrt{3} \Rightarrow V = \frac{3a^2\sqrt{3}\sqrt{3}6}{3 \cdot 2} \therefore$

$\therefore \Rightarrow V = \frac{3a^2 \cancel{3} 6}{\cancel{3} \cdot 2} \Rightarrow \boxed{V = \frac{3a^2 6}{2}\ cm^3}$

$\Rightarrow$ Letra A.

5-) $\text{Aresta Base} = \text{lado} = 4\ cm$ | $h = 6\sqrt{3}\ cm$ | $V = ?$

$V = \frac{1}{3} \cdot V_{prisma}$

$V = \frac{1}{3} \cdot A_{hex} \cdot h$

$V = \frac{1}{3} \cdot 24\sqrt{3} \cdot 6\sqrt{3}$

$V = \frac{24 \cdot 6\sqrt{3}\sqrt{3}}{3}$

$V = \frac{24 \cdot 6 \cdot \cancel{3}}{\cancel{3}}$

$V = 24 \cdot 6 \Rightarrow \boxed{V = 144\ cm^3}$

$\Rightarrow$ Letra D.

$A_{hex} = \frac{3l^2\sqrt{3}}{2}$

$A_{hex} = \frac{3 \cdot 4^2\sqrt{3}}{2}$

$A_{hex} = \frac{3 \cdot \cancel{16} \cdot \sqrt{3}}{\cancel{2}}$

$A_{hex} = 24\sqrt{3}\ cm^2$

Exercícios 6 e 7:

6-) Perímetro = 6 cm | h = 8 cm

2 lados = $\frac{6}{6}$ ⇒ 2 lados = 1 cm

$A_{base} = \frac{3l^2\sqrt{3}}{2}$

$A_{base} = \frac{3 \cdot 1^2\sqrt{3}}{2}$

$A_{base} = \frac{3\sqrt{3}}{2}$

$V = \frac{1}{3} \cdot V_{prisma}$

$V = \frac{1}{3} \cdot A_{base} \cdot h$

$V = \frac{1}{3} \cdot \frac{3\sqrt{3}}{2} \cdot 8$

$V = \frac{1 \cdot 8 \cdot \cancel{3}\sqrt{3}}{\cancel{3} \cdot 2}$ ⇒ $V = 4\sqrt{3}\ cm^2$ ⇒ Letra A.

7-)

$V_{pir} = V_{prisma}$

$V_{prisma} = A_{base} \cdot h_{prisma}$

$= l^2 \cdot h_{prisma}$

$V_{prisma} = a^2 \cdot h_{prisma}$

$V_{pir} = \frac{1}{3} \cdot V_{prisma}$

$V_{pir} = \frac{1}{3} \cdot A_{base} \cdot h_{pir}$

$V_{pir} = \frac{1}{3} \cdot l^2 \cdot h_{pir}$

$V_{pir} = \frac{1}{3} \cdot (2a)^2 \cdot h_{pir}$

$V_{pir} = \frac{4a^2 \cdot h_{pir}}{3}$

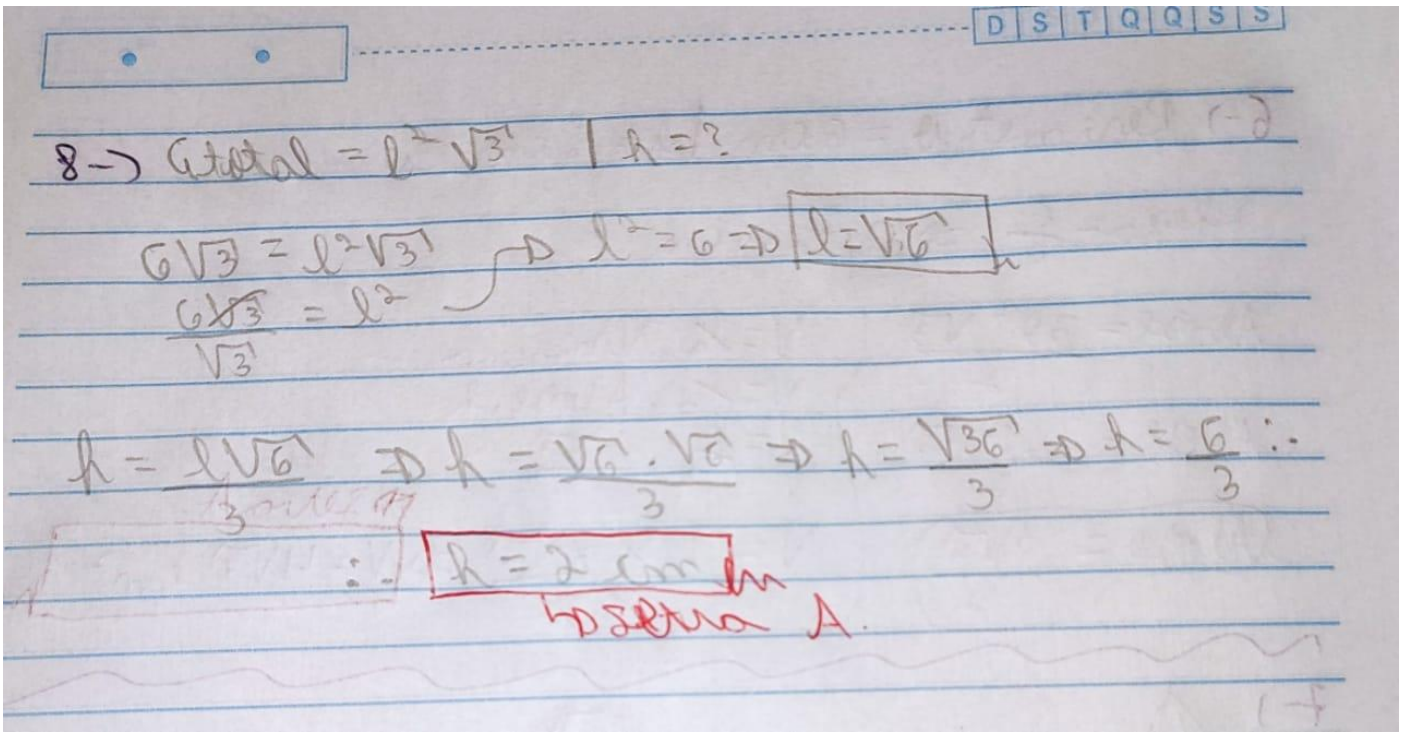
⇒ $V_{pir} = V_{prisma}$

$\frac{4a^2 \cdot h_{pir}}{3} = a^2 \cdot h_{prisma}$

$4a^2 \cdot h_{pir} = 3a^2 \cdot h_{prisma}$

$\frac{h_{pir}}{h_{prisma}} = \frac{3\cancel{a^2}}{4\cancel{a^2}}$ ⇒ $\frac{h_{pir}}{h_{prisma}} = \frac{3}{4}$ ⇒ Letra A

Exercício 8:


D S T Q Q S S
8 -> Gtotal = l² √3 | h = ?
6√3 = l²√3
6√3 / √3 = l²
l² = 6 => l = √6
h = l√6 / 3
h = √6 . √6 / 3
h = √36 / 3
h = 6 / 3
h = 2 cm
Letra A.