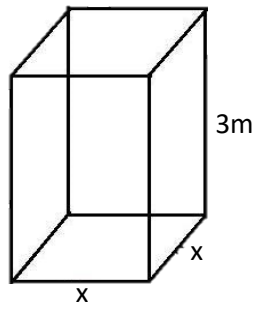
GEOMETRIA ESPACIAL

prismas

ANA BEATRIZ RIBEIRO SILVA – CTII 317

01-



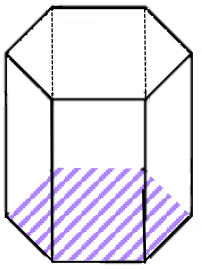
$At = 2 * x^2 + 4 * 3 * x$
$80 = 2 * x^2 * 12x$
$x^2 + 6x - 40 = 0$

$\Delta = 6^2 - 4 * 1 * -40 =$
$\Delta = 36 + 160$
$\Delta = 196$

$x = \frac{-6 \pm \sqrt{196}}{2 * 1} => x = \frac{-6 \pm 14}{2}$

$\boldsymbol{x_i = \frac{-6+14}{2} = 4m}$ $x_{ii} = \frac{-6-14}{2} = -10$

02-

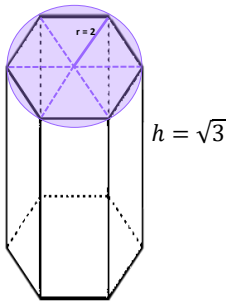


$\boldsymbol{Ab = 24\sqrt{3}cm^2}$

$Ab = \frac{3l^2\sqrt{3}}{2}$
$24\sqrt{3} = \frac{3l^2\sqrt{3}}{2}$
$l = 4$

$A_l = 6 * b * h$
$A_l = 6 * 4 * 2\sqrt{3}$
$\boldsymbol{A_l = 48\sqrt{3}\ cm^2}$

03-

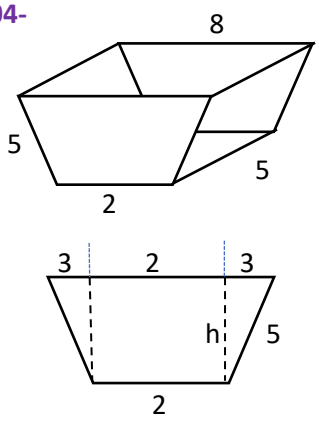


$A_b = 6 * \frac{2^2\sqrt{3}}{4}$
$A_b = 6\sqrt{3}$

$A_l = 6 * 2 * \sqrt{3}$
$A_l = 12\sqrt{3}$

$A_t = 12\sqrt{3} + 2 * 6\sqrt{3}$
$\boldsymbol{A_t = 24\sqrt{3}}$ (B)

04-

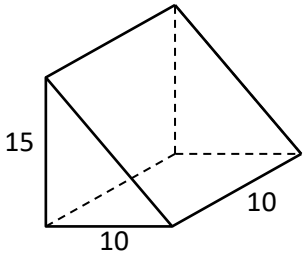


$5^2 = h^2 + 3^2$
$h^2 = 25 - 9$
$h = \sqrt{16}$
$h = 4$

$A_b = \frac{(8+2) * 4}{2}$
$A_b = 20$

$V = 20 * 5$
$\boldsymbol{V = 100\ m^3}$ $(\boldsymbol{D})$

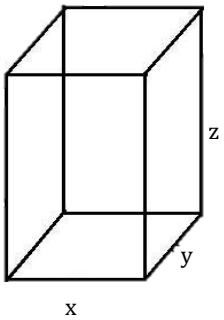
05-



$A_b = \frac{10 * 15}{2}$
$A_b = 75\ cm^2$

$V = 75 * 10$
$\boldsymbol{V = 750\ cm^3}$ (C)

06-



$A_t = 4x^2$ e $z = 2y$

$2xy + 2xz + 2yz = 4x^2$
$xy + x * 2y + y * 2y = 2x^2$
$2x^2 + 3yx - 2y^2 = 0$

$\Delta = 3y^2 - 4 * 2 * -2y^2$
$\Delta = 25y^2$

$x = \frac{-3y \pm \sqrt{25y^2}}{2*2} \Rightarrow x = \frac{-3y + 5y}{4}$ $x = \frac{2y}{4} = \frac{y}{2} \Rightarrow y = 2x$

$A_b = x * 2x = 2x^2$
$V = 2x^2 * 4x = 8x^3$

PARALELEPÍPEDOS e cubos

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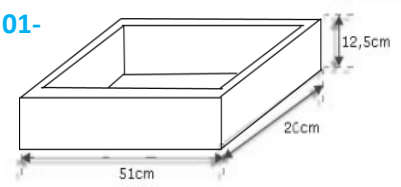
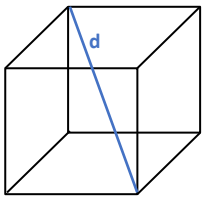
01-



51 – 1 = 50cm -> 0,5m
26 – 1 = 25 -> 0,25m
12,5 – 0,5 = 12 -> 0,12m

$V = 0,5 * 0,25 * 0,12$
$\boldsymbol{V = 0,015\ m^3}$ **(A)**

02-



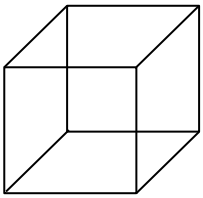
$A_t = 72m^2$

$A_f = \frac{72}{6} => A_f = 12m^2$

Aresta (a) = $\sqrt{A_f} = 2\sqrt{3}$

Diagonal (d) = $a\sqrt{3} = 2\sqrt{9}$
d = 2*3 => $\boldsymbol{d = 6\ m}$ **(B)**

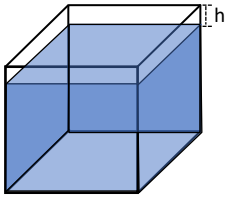
03-



a = 50cm -> 0,5m
$1m^3$ -> 1000l

$V = 0,5^3$
$V = 0,125m^3$
$\boldsymbol{V = 125l}$ **(A)**

04-

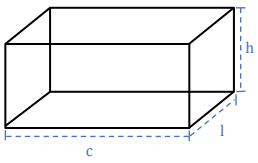


a = 1m
$1l = 1dm^3$
V = 1000l

$1000cm^3 = 1m * 1m * h$
$1000cm^3 = 100cm * 100cm * h$
$\frac{1000cm^2 * cm}{1000cm^2} = h => h = \frac{1}{10}$ cm

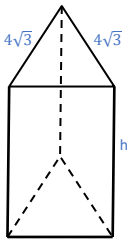
$h = 0,1cm$ -> 1mm
$\boldsymbol{h = 0,001m}$

05-



$V = h * l * c$
$V = h * 2l * 2c$
$V = 4hlc$
$\boldsymbol{V = 4V}$ **(C)**

06-



$A_{b_\Delta} = \frac{(4\sqrt{3})^2}{4} * h$

$\frac{(4\sqrt{3})^2}{4} * h = 4\sqrt{3} * 4\sqrt{3} * 4\sqrt{3}$

$\frac{h}{4} = 4 => h = 16$

$A_t = \frac{(4\sqrt{3})^2 * \sqrt{3}}{4} * 2 + 3 * 4\sqrt{3} * 16$

$A_t = \frac{16 * 3 * \sqrt{3}}{4} * 2 + 192\sqrt{3}$

$A_t = 24\sqrt{3} + 192\sqrt{3}$

$\boldsymbol{A_t = 216\sqrt{3}cm^2}$ **(D)**