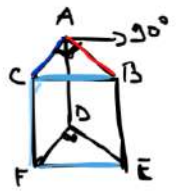
Lezione 24



$\overline{CB} = 50\,cm$

$\overline{AC} = 48\,cm$

$\overline{CF} = \frac{5}{8}\, 2p_{ABC}$

$S_T = ?$

$V = ?$

$\overline{AB} = \sqrt{\overline{BC}^2 - \overline{AC}^2} = \sqrt{2500cm^2 - 2304cm^2} = \sqrt{196\,cm^2} = 14\,cm$

$2p_{ABC} = \overline{AB} + \overline{BC} + \overline{AC} = 112\,cm$

$\overline{CF} = \frac{5}{8} \cdot 112\,cm = 70\,cm$

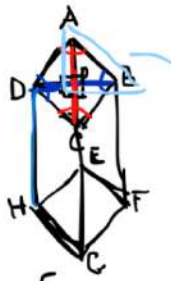
$S_l = 2p_{ABC} \cdot \overline{CF} = 112\,cm \cdot 70\,cm = 7840cm^2$

$\boxed{S_T = S_l + 2A_b}$

$A_b = \frac{\overline{AB} \cdot \overline{AC}}{2} = \frac{14\,cm \cdot 48\,cm}{2} = 336cm^2$

$S_T = S_l + 2A_b = 7840cm^2 + 2 \cdot 336cm^2 = 8512\,cm^2$

$V = A_b \cdot \overline{CF} = 336\,cm^2 \cdot 70\,cm = 23520\,cm^3$



$\overline{AC} \perp \overline{BD}$

LAVORO SU HOB

$\overline{BD} = 16\,cm$

$\overline{AC} = 12\,cm$

$\overline{DH} = \overline{AB}$

$S_T = ?$

$V = ?$

$\overline{AO} = \frac{\overline{AC}}{2} = \frac{12\,cm}{2} = 6\,cm$ $\quad \overline{OB} = \frac{\overline{BD}}{2} = \frac{16\,cm}{2} = 8\,cm$

$\overline{AB} = \sqrt{\overline{AO}^2 + \overline{OB}^2} = \sqrt{36\,cm^2 + 64\,cm} = \sqrt{100\,cm^2} = 10\,cm$

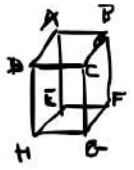
$\overline{DH} = 10\,cm$ $\quad 2p = \overline{AB} \cdot 4 = 40\,cm$

$S_l = 2p \cdot \overline{DH} = 40\,cm \cdot 10\,cm = 400\,cm^2$

$A_b = \frac{\overline{BD} \cdot \overline{AC}}{2} = \frac{16\,cm \cdot 12\,cm}{2} = 96\,cm^2$

$S_T = S_l + 2A_b = 400\,cm^2 + 2 \cdot 96\,cm^2 = 592\,cm^2$

$V = A_b \cdot \overline{DH} = 96\,cm^2 \cdot 10\,cm = 960\,cm^3$



$\overline{DH} = 8\,cm$

$2p_{ABCD} = 40\,cm$

$S_T = ?$

$V = ?$

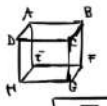
$S_\ell = 2p_{ABCD} \cdot \overline{DH} = 40\,cm \cdot 8\,cm = \underline{320\,cm^2}$

$\overline{AB} = \frac{2p_{ABCD}}{4} = \frac{40\,cm}{4} = 10\,cm$

$A_B = \overline{AB}^2 = (10\,cm)^2 = \underline{100\,cm^2}$

$S_T = S_\ell + 2A_B = 320\,cm^2 + 200\,cm^2 = \underline{520\,cm^2}$

$V = A_B \cdot \overline{DH} = 100\,cm^2 \cdot 8\,cm = \underline{800\,cm^2}$



$2p_{ABCD} = 64\,cm$

$\overline{AD} = \frac{3}{5}\overline{AB}$

$S_T = 2272\,cm^2$

$V = ?$

$2p_{ABCD} = 2\overline{AB} + 2\overline{AD} = 64\,cm$

$\overline{AB} = x \qquad \overline{AD} = \frac{3}{5}\overline{AB} = \frac{3}{5}x$

$2 \cdot x + 2 \cdot \frac{3}{5}x = 64\,cm$

$\frac{2}{1}x + \frac{6}{5}x = \frac{64\,cm}{1}$

$\frac{10x + 6x}{5} = \frac{320\,cm}{5}$

$16x = 320\,cm \Rightarrow x = 20\,cm$

$\overline{AB} = 20\,cm$

$\overline{AD} = \frac{3}{5} \cdot 200\,cm = 120\,cm$ $\qquad \overline{AD} = 120\,cm$

$A_b = \overline{AB} \cdot \overline{AD} = 20\,cm \cdot 120\,cm = 2400\,cm^2$

$S_T = S_\ell + 2A_b$

$(-1) \cdot \quad -S_\ell = -S_T + 2A_b \quad (\cdot(-1)) \Rightarrow S_\ell = S_T - 2A_b$

$S_\ell = 2272\,cm^2 - 2 \cdot 240\,cm^2 = 2272\,cm^2 - 480\,cm^2$

$= 1792\,cm^2$

$S_\ell = 1792\,cm^2 \qquad 2p_{ABCD} = 64\,cm$

$S_\ell = 2p_{ABCD} \cdot \overline{DH} \Rightarrow \overline{DH} = \frac{S_\ell}{2p_{ABCD}} = \frac{1792\,cm^2}{64\,cm}$

$= 28\,cm$

$\overline{DH} = 28\,cm \qquad A_b = 240\,cm^2$

$V = A_b \cdot \overline{DH} = 240\,cm^2 \cdot 28\,cm = 6720\,cm^3$

$$(3x-2)(3x+2)-\left(x-\frac{2}{3}\right)^2-8x^2=\frac{2}{3}(3x+2)-\frac{32}{9}$$

$$9x^2-4-\left(x^2+\frac{4}{9}-\frac{4}{3}x\right)-8x^2=\frac{2}{3}(3x+2)-\frac{32}{9}$$

$$9x^2-4-x^2-\frac{4}{9}+\frac{4}{3}x-8x^2=\frac{2}{3}(3x+2)-\frac{32}{9}$$

$$\frac{81x^2-36-9x^2-4+12x-72x^2}{9}=\frac{6(3x+2)-32}{9}$$

$$8x^2-36-9x^2-4+12x-72x^2=18x+12-32$$

$$12x-18x=12-32+36+4$$

$$-6x=20$$

$$\frac{-6}{-6}x=\frac{20}{-6}\Rightarrow x=-\frac{10}{3}$$

$$\boxed{x=-\frac{10}{3}}$$