

4 - Un parallelepipedo rettangolo ha lo spigolo a di cm 10, lo spigolo b è $\frac{1}{2}$ di a e lo spigolo c è il doppio di a.

a - Calcola V, Sl, St, e peso considerando che sia di rovere (PS 0,8)

b - Calcola il volume di un parallelepipedo rettangolo avente lo stesso perimetro di base e la stessa altezza e lo spigolo a $\frac{2}{3}$ dello spigolo b

5 - Un prisma triangolare regolare retto ha il perimetro di base di cm 60 e l'altezza metà dello spigolo di base.

a - Calcola V, Sl e St (numeri fissi N= 0,288 ; N' = 0,433)

b - Calcola la Sl di un cubo equivalente.

Espressioni da www.ubimath.org

$$33. \quad \frac{2}{5} : \left(-\frac{1}{2}\right) - \left[-\frac{33}{12} : \left(\frac{1}{2} - \frac{7}{3}\right) - 2\right] - \frac{2}{5}$$

$$34. \quad \frac{1}{36} - \left\{ \frac{1}{9} + \left[-\frac{2}{3} \cdot \left(\frac{1}{2} - 1\right) - \frac{1}{2} \right] + \frac{1}{3} \cdot \left(1 - \frac{5}{3}\right) \right\} \cdot \left(-1 - \frac{3}{2}\right)$$

$$12. \quad \left\{ \left[-\frac{15}{3} + \frac{3}{8} + \left(-\frac{1}{2}\right)^3 + \frac{9}{2} \right] \div \left[-\left(-\frac{2}{5}\right)^2 + \frac{3}{20} - \left(-\frac{1}{5}\right)^2 \right] \right\} - \frac{11}{2} =$$

$$\begin{aligned}
& \frac{2}{5} \cdot \left(-\frac{1}{2}\right) - \left[-\frac{33}{12} \cdot \left(\frac{1}{2} - \frac{7}{3}\right) - 2\right] - \frac{2}{5} = \\
& = \frac{2}{5} \cdot \left(-\frac{2}{1}\right) - \left[-\frac{33}{12} \cdot \left(\frac{3-14}{6}\right) - 2\right] - \frac{2}{5} = \\
& = -\frac{4}{5} - \left[-\frac{33}{12} \cdot \left(-\frac{11}{6}\right) - 2\right] - \frac{2}{5} = \\
& = -\frac{4}{5} - \left[+\frac{3}{2} - 2\right] - \frac{2}{5} = \\
& = -\frac{4}{5} - \left[\frac{3-4}{2}\right] - \frac{2}{5} = \\
& = -\frac{4}{5} - \left[-\frac{1}{2}\right] - \frac{2}{5} = \\
& = -\frac{4}{5} + \frac{1}{2} - \frac{2}{5} = \\
& = \frac{-8+5-4}{10} = -\frac{7}{10}
\end{aligned}$$

$$\begin{aligned}
& \frac{1}{36} - \left\{\frac{1}{9} + \left[-\frac{2}{3} \cdot \left(\frac{1}{2} - 1\right) - \frac{1}{2}\right] + \frac{1}{3} \cdot \left(1 - \frac{5}{3}\right)\right\} \cdot \left(-1 - \frac{3}{2}\right) = \\
& = \frac{1}{36} - \left\{\frac{1}{9} + \left[-\frac{2}{3} \cdot \left(-\frac{1}{2}\right) - \frac{1}{2}\right] + \frac{1}{3} \cdot \left(-\frac{2}{3}\right)\right\} \cdot \left(-\frac{5}{2}\right) = \\
& = \frac{1}{36} - \left\{\frac{1}{9} + \left[\frac{1}{3} - \frac{1}{2}\right] - \frac{2}{9}\right\} \cdot \left(-\frac{5}{2}\right) = \\
& = \frac{1}{36} - \left\{\frac{1}{9} + \left(-\frac{1}{6}\right) - \frac{2}{9}\right\} \cdot \left(-\frac{5}{2}\right) = \\
& = \frac{1}{36} - \left\{\frac{1}{9} - \frac{1}{6} - \frac{2}{9}\right\} \cdot \left(-\frac{5}{2}\right) = \\
& = \frac{1}{36} - \left\{\frac{2-3-4}{18}\right\} \cdot \left(-\frac{5}{2}\right) = \\
& = \frac{1}{36} - \left\{-\frac{5}{18}\right\} \cdot \left(-\frac{5}{2}\right) = \\
& = \frac{1}{36} - \frac{25}{36} = \\
& = \frac{1-25}{36} = \\
& = -\frac{24}{36} = -\frac{2}{3}
\end{aligned}$$

$$\begin{aligned}
&= \left\{ \left[-5 + \frac{3}{8} - \frac{1}{8} + \frac{9}{2} \right] \div \left[-\frac{4}{25} + \frac{3}{20} - \frac{1}{25} \right] \right\} - \frac{11}{2} = \\
&= \left\{ \left[\frac{-40 + 3 - 1 + 36}{8} \right] \div \left[\frac{-16 + 15 - 4}{100} \right] \right\} - \frac{11}{2} = \\
&= \left\{ -\frac{2}{8} \div \left(-\frac{5}{100_{20}} \right) \right\} - \frac{11}{2} = \\
&= \left\{ -\frac{1}{4} \cdot \left(-\frac{20}{1} \right) \right\} - \frac{11}{2} = +5 - \frac{11}{2} = \frac{10 - 11}{2} = -\frac{1}{2}
\end{aligned}$$

$$b = \frac{1}{2}e = \frac{1}{2} \cdot 10 = 5 \text{ cm}$$

$$c = 2e = 2 \cdot 10 = 20 \text{ cm}$$

$$V = a \cdot b \cdot c = 10 \cdot 5 \cdot 20 = 1000 \text{ cm}^3$$

$$S_f = 2ab + 2$$

$$S_f = p_b \cdot c = (a+b) \cdot 2 \cdot c = \left(\underset{15}{10+5} \right) \cdot 2 \cdot 20 = 30 \cdot 20 = 600 \text{ cm}^2$$

$$S_T = 2ab + 2bc + 2ac = \underbrace{2 \cdot 10 \cdot 5}_{100} + \underbrace{2 \cdot 5 \cdot 20}_{200} + \underbrace{2 \cdot 10 \cdot 20}_{400} = 700 \text{ cm}^2$$

$$P = \rho_s \cdot V = 0,8 \cdot 1000 = 800 \text{ g}$$

$$a = \frac{2}{3}b \quad \frac{P}{2} = \frac{30}{2} = 15 \text{ cm} \quad \frac{3}{3} + \frac{2}{3} = \frac{5}{3} \equiv 15 \text{ cm}$$

$$15 : 5 = 3 \text{ cm U.F.}$$

$$a = 3 \cdot 3 = 9 \text{ cm}$$

$$b = 3 \cdot 2 = 6 \text{ cm}$$

$$V = a \cdot b \cdot c = 9 \cdot 6 \cdot 9 \cdot 20 = 1080 \text{ cm}^3$$

$$l = p : 3 = 60 : 3 = 20 \text{ cm}$$

$$h = l : 2 = 20 : 2 = 10 \text{ cm}$$

$$A_b = l^2 \cdot N' = 20^2 \cdot 0,433 = 400 \cdot 0,433 = 173,200 \text{ cm}^3$$

$$V = A_b \cdot h = 173,2 \cdot 10 = 1732 \text{ cm}^3$$

$$SP = p_b \cdot h = 60 \cdot 10 = 600 \text{ cm}^2$$

$$St = SP + 2A_b = 600 + 2 \cdot 173,2 = 946,4 \text{ cm}^2$$

$$l_c = \sqrt[3]{V} = \sqrt[3]{1732} \approx 12 \text{ cm}$$

$$Sl_c = 4l^2 = 4 \cdot 12^2 = 4 \cdot 144 \approx 576 \text{ cm}^2$$