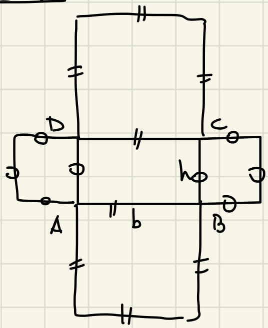
Pag 727

Es 44:



$AB = b \quad BC = h$

$$\begin{cases} 6h + 6b - 10 = \frac{15}{2}b + \frac{16}{5}h \\ \frac{3}{5}h = 5 + \frac{1}{4}b \end{cases}$$

$$\begin{cases} 60h + 60b - 100 = 75b + 32h \\ 12h = 100 + 5b \end{cases}$$

$$\begin{cases} 15b - 28h = -100 \\ 5b - 12h = -100 \quad \cdot 3 \end{cases} \quad \downarrow -$$

$8h = 200$

$h = 25 \leadsto b = 40$

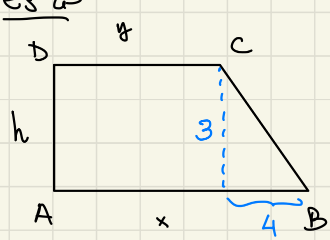
$$2b^2 + 2h^2 + bh = 2\cdot(2^3 5)^2 + 2(5^2)^2 + 5^2\cdot 2^3\cdot 5 =$$

$$2^7\cdot 5^2 + 2\cdot 5^4 + 2^3\cdot 5^3 = 2\cdot 5^2(2^6 + 5^2 + 2^2\cdot 5)$$

Non molto furbo

$$= 50(64 + 25 + 20)$$
$$= 50(109)$$
$$= \frac{100\cdot 109}{2} = \frac{10900}{2} = 5450$$

Es 45



$AD = h$

$AB = x$

$DC = y$

$$\begin{cases} x = \frac{5}{3}y \\ h + \frac{1}{3}y = \frac{x}{2} \\ \frac{3}{4}x - \frac{1}{2}y + \frac{1}{6}(y+h) = 6 \end{cases}$$

la metto sotto

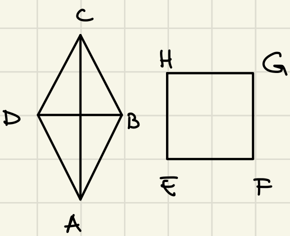
$$\begin{cases} h + \frac{1}{3}y = \frac{5}{6}y \\ \frac{5}{4}y - \frac{1}{2}y + \frac{1}{6}y + \frac{1}{6}h = 6 \end{cases} \leadsto \begin{cases} 6h + 2y = 5y \\ 15y - 6y + 2y + 2h = 72 \end{cases}$$

$\begin{cases} 3y = 6h \\ 11y + 2h = 72 \end{cases}$ $\rightsquigarrow$ $y = 2h$ $\rightsquigarrow$ $24h = 72$ $\rightsquigarrow$ $h = 3$ $\rightsquigarrow$ $y = 6$ $\rightsquigarrow$ $x = 10$

$CB^2 = h^2 + (x-y)^2 = 5^2 \rightsquigarrow CB = 5$

$P = AB + BC + CD + DA = 3 + 6 + 10 + 5 = 24$

<u>Es 46</u>



$BD = d$
$AC = b$
$EF = \ell$

$\begin{cases} d + b + \ell = 140 \\ \ell = \frac{1}{3}(d+b) \end{cases}$

caso 1 : $\frac{1}{2} b + \frac{1}{3} d = \ell + 10$

caso 2 : $\frac{1}{2} d + \frac{1}{3} b = \ell + 10$

Se guardo solo $\begin{cases} \boxed{d+b} + \ell = 140 \\ 3\ell = \boxed{d+b} \end{cases}$ $\rightsquigarrow$ $3\ell + \ell = 140$ $\rightsquigarrow$ $\ell = \frac{140}{4} = 35$

Caso 2 : $\begin{cases} d + b = 105 \\ \frac{1}{2} d + \frac{1}{3} b = 35 + 10 \end{cases}$ $\begin{cases} d + b = 105 \\ 3d + 2b = 270 \end{cases}$ $\begin{cases} 3d = 315 - 3b \\ 3d = 270 - 2b \end{cases}$

$315 - 3b = 270 - 2b \rightsquigarrow b = 45$
$\rightsquigarrow d = 105 - 45 = 60$

Dato che $b \geq d$, la soluzione non va. Imponendo il caso 1 trovo gli stessi risultati coerenti $b = 60$, $d = 45$, $\ell = 35$ ...
e poi fare conti ...

Es 86 pag 754

86 $\underbrace{\sqrt{6+\underbrace{\sqrt{10-\underbrace{\sqrt{5-\underbrace{\sqrt{(-4)^2}}_{4}}}_{1}}}_{3}}}_{3} : \underbrace{\sqrt[3]{16:\underbrace{\sqrt[3]{\frac{1}{64}}}_{\frac{1}{4}}}}_{4} - \sqrt[3]{\underbrace{-\frac{9}{8}\underbrace{\sqrt{9}}_{3}}_{-\frac{27}{8}}}$

$16 : \frac{1}{4} = 64$ perchè l'ho letto Moretti

$$3 : 4 - \left(-\frac{3}{2}\right) = \frac{3}{4} + \frac{3}{2} = \frac{9}{4}$$

Esercizio:

$$\sqrt[3]{2^9} = 2^3 \qquad \sqrt{3^{50}} = 3^{25} \qquad \sqrt[3]{3^6 \cdot 2^9} = 3^2 \cdot 2^3$$

$$\sqrt[3]{2^{10}} = \sqrt[3]{2^3\, 2^3 \cdot 2^3 \cdot 2} = 2 \cdot 2 \cdot 2\sqrt[3]{2} = 8\sqrt[3]{2} \left(= 2^{\frac{10}{3}}\right)$$