

Espressioni da www.ubimath.org

$$17. \left\{ \frac{15}{16} - \left[\left(\frac{3}{2} - \frac{1}{4} \right)^2 : \frac{5}{4} - \left(\frac{1}{2} + \frac{1}{4} \right)^2 \right] \right\}^2 + \frac{1}{4}$$

$$18. \left\{ 1 - \left[1 - \left(\frac{1}{6} + \frac{1}{3} \right) \right] \right\}^2 \cdot \left(\frac{1}{2} + \frac{3}{4} \right)^2 \cdot \left[2 - \frac{1}{3} \cdot \left(\frac{7}{10} + \frac{1}{2} \right) \right]^2$$

$$19. \left\{ \left[\left(\frac{1}{2} + \frac{1}{3} \right)^2 : \left(1 + \frac{1}{4} \right)^2 \right] + \left[\left(\frac{4}{21} : \frac{8}{7} + \frac{12}{7} : \frac{3}{7} \right) : \left(2 - \frac{7}{6} \right) \right] \right\} : \left(\frac{7}{3} \right)^2$$

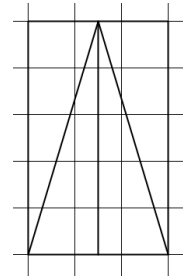
In un trapezio rettangolo la somma delle due basi è di cm 35 e la base maggiore è $\frac{4}{3}$ della base minore. Sapendo che l'altezza $\frac{3}{5}$ della base maggiore e che il lato obliquo misura cm 13. Trova perimetro e area.

Considera il triangolo isoscele e il rettangolo presenti nella figura a fianco. L'area del rettangolo è $\text{cm}^2 60$. Calcola la misura della base e dell'altezza

In un rombo il perimetro misura cm 60, la diagonale maggiore $\frac{8}{5}$ del lato e quella minore è $\frac{3}{4}$ di quella maggiore.

Calcola l'area.

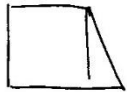
+ Calcola il perimetro di un quadrato equivalente.



$$\begin{aligned}
& \left\{ \frac{15}{16} - \left[\left(\frac{3}{2} - \frac{1}{4} \right)^2 \cdot \frac{5}{4} - \left(\frac{1}{2} + \frac{1}{4} \right)^2 \right] \right\}^2 + \frac{1}{4} = \\
& = \left\{ \frac{15}{16} - \left[\left(\frac{6-1}{4} \right)^2 \cdot \frac{4}{5} - \left(\frac{2+1}{4} \right)^2 \right] \right\}^2 + \frac{1}{4} = \\
& = \left\{ \frac{15}{16} - \left[\left(\frac{5}{4} \right)^2 \cdot \frac{4}{5} - \left(\frac{3}{4} \right)^2 \right] \right\}^2 + \frac{1}{4} = \\
& = \left\{ \frac{15}{16} - \left[\frac{5}{4} - \frac{9}{16} \right] \right\}^2 + \frac{1}{4} = \\
& = \left\{ \frac{15}{16} - \left[\frac{20-9}{16} \right] \right\}^2 + \frac{1}{4} = \\
& = \left\{ \frac{15}{16} - \frac{11}{16} \right\}^2 + \frac{1}{4} = \\
& = \left\{ \frac{4}{16} \right\}^2 + \frac{1}{4} = \\
& = \left\{ \frac{1}{4} \right\}^2 + \frac{1}{4} = \\
& = \frac{1}{16} + \frac{1}{4} = \\
& = \frac{1+4}{16} = \frac{5}{16}
\end{aligned}$$

$$\begin{aligned}
& \left\{ 1 - \left[1 - \left(\frac{1}{6} + \frac{1}{3} \right) \right] \right\}^2 \cdot \left(\frac{1}{2} + \frac{3}{4} \right)^2 \cdot \left[2 - \frac{1}{3} \cdot \left(\frac{7}{10} + \frac{1}{2} \right) \right]^2 = \\
& = \left\{ 1 - \left[1 - \left(\frac{1+2}{6} \right) \right] \right\}^2 \cdot \left(\frac{2+3}{4} \right)^2 \cdot \left[2 - \frac{1}{3} \cdot \left(\frac{7+5}{10} \right) \right]^2 = \\
& = \left\{ 1 - \left[1 - \frac{3}{6} \right] \right\}^2 \cdot \left(\frac{5}{4} \right)^2 \cdot \left[2 - \frac{1}{3} \cdot \left(\frac{12}{10} \right) \right]^2 = \\
& = \left\{ 1 - \left[1 - \frac{1}{2} \right] \right\}^2 \cdot \frac{25}{16} \cdot \left[2 - \frac{1}{3} \cdot \left(\frac{6}{5} \right) \right]^2 = \\
& = \left\{ 1 - \frac{1}{2} \right\}^2 \cdot \frac{25}{16} \cdot \left[2 - \frac{2}{5} \right]^2 = \\
& = \frac{1}{4} \cdot \frac{25}{16} \cdot \frac{64}{25} = 1
\end{aligned}$$

$$\begin{aligned}
& \left\{ \left[\left(\frac{1}{2} + \frac{1}{3} \right)^2 : \left(1 + \frac{1}{4} \right)^2 \right] + \left[\left(\frac{4}{21} : \frac{8}{7} + \frac{12}{7} : \frac{3}{7} \right) : \left(2 - \frac{7}{6} \right) \right] \right\} : \left(\frac{7}{3} \right)^2 = \\
& = \left\{ \left[\left(\frac{3+2}{6} \right)^2 : \left(\frac{4+1}{4} \right)^2 \right] + \left[\left(\frac{4}{21} \cdot \frac{7}{8} + \frac{12}{7} \cdot \frac{7}{3} \right) : \left(\frac{12-7}{6} \right) \right] \right\} : \frac{49}{9} = \\
& = \left\{ \left[\left(\frac{5}{6} \right)^2 : \left(\frac{5}{4} \right)^2 \right] + \left[\left(\frac{1}{6} + 4 \right) : \frac{5}{6} \right] \right\} \cdot \frac{9}{49} = \\
& = \left\{ \left[\frac{25}{36} \cdot \frac{16}{25} \right] + \left[\left(\frac{1+24}{6} \right) \cdot \frac{6}{5} \right] \right\} \cdot \frac{9}{49} = \\
& = \left\{ \frac{4}{9} + \left[\frac{25}{6} \cdot \frac{6}{5} \right] \right\} \cdot \frac{9}{49} = \\
& = \left\{ \frac{4}{9} + 5 \right\} \cdot \frac{9}{49} = \\
& = \left\{ \frac{4+45}{9} \right\} \cdot \frac{9}{49} = \\
& = \frac{49}{9} \cdot \frac{9}{49} = 1
\end{aligned}$$



$$B + b = \text{cm } 35$$

$$B = \frac{4}{3} b$$

$$h = \frac{3}{5} B$$

$$l = 13 \text{ cm}$$

$$p = ? \quad A = ?$$

$$\frac{4}{3} + \frac{3}{3} = \frac{7}{3} \equiv 35 \text{ cm}$$

$$35 : 7 = 5 \text{ cm U.F.}$$

$$B = 5 \cdot 4 = 20 \text{ cm}$$

$$b = 5 \cdot 3 = 15 \text{ cm}$$

$$h = 20 \cdot \frac{3}{5} = 12 \text{ cm}$$

$$A = \frac{(B+b) \cdot h}{2} = \frac{(20+15) \cdot 12}{2} = 210 \text{ cm}^2$$

$$p = B + b + h + l = 20 + 15 + 12 + 13 = 60 \text{ cm}$$

Il rettangolo è formato da 15 quadrati

$$A_{\text{quad}} = 60 : 15 = 4 \text{ cm}^2$$

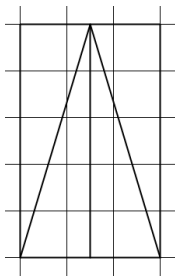
$$l_{\text{quad}} = \sqrt{A} = \sqrt{4} = 2 \text{ cm}$$

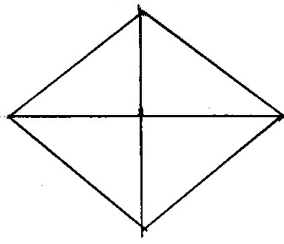
La base è formata da 3 quadrati, quindi

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

La altezza è formata da 5 quadrati, quindi

$$h = 2 \times 5 = 10 \text{ cm}$$





$$p = 60 \text{ cm}$$

$$D = 24 \text{ cm}$$

$$d = \frac{3}{4} D$$

$$A_r = A_q = ? \quad P_q = ?$$

$$l = p : 4 = 60 : 4 = 15 \text{ cm}$$

$$D = \frac{8}{5} l = \frac{8}{5} \cdot 15 = 24 \text{ cm}$$

$$d = \frac{3}{4} D = \frac{3}{4} \cdot 24 = 18 \text{ cm}$$

$$A_r = \frac{D \cdot d}{2} = \frac{24 \cdot 18}{2} = 216 \text{ cm}^2 = A_q$$

$$l_q = \sqrt{A} = \sqrt{216} \approx 14,7 \text{ cm}$$

$$P_q = l \times 4 = 14,7 \times 4 = 58,8 \text{ cm}$$