3/11/2020

888 $\left(\dfrac{\sqrt{6}-\sqrt{2}+\sqrt{15}-\sqrt{5}}{\sqrt{6}+\sqrt{2}+\sqrt{15}+\sqrt{5}}-2+\sqrt{75}\right)^2=$

$$=\left(\frac{\sqrt{2}(\sqrt{3}-1)+\sqrt{5}(\sqrt{3}-1)}{\sqrt{2}(\sqrt{3}+1)+\sqrt{5}(\sqrt{3}+1)}-2+\sqrt{3\cdot 5^2}\right)^2=$$

$$=\left(\frac{(\sqrt{3}-1)\cancel{(\sqrt{2}+\sqrt{5})}}{(\sqrt{3}+1)\cancel{(\sqrt{2}+\sqrt{5})}}-2+5\sqrt{3}\right)^2=$$

$$=\left(\frac{\sqrt{3}-1}{\sqrt{3}+1}\cdot\frac{\sqrt{3}-1}{\sqrt{3}-1}-2+5\sqrt{3}\right)^2=$$

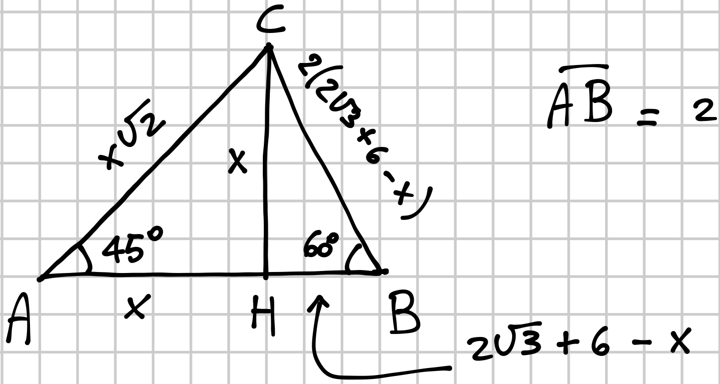
$$=\left(\frac{(\sqrt{3}-1)^2}{3-1}-2+5\sqrt{3}\right)^2=$$

$$=\left(\frac{\overbrace{3+1}^{4}-2\sqrt{3}}{2}-2+5\sqrt{3}\right)^2=$$

$$=\left(\frac{\cancel{2}(2-\sqrt{3})}{\cancel{2}}-2+5\sqrt{3}\right)^2=\left(\cancel{2}-\sqrt{3}-\cancel{2}+5\sqrt{3}\right)^2=$$

$$=(4\sqrt{3})^2=16\cdot 3=\boxed{48}$$

967 In un triangolo ABC, $B\widehat{A}C = 45°$, $A\widehat{B}C = 60°$ e la lunghezza di AB è $(2\sqrt{3} + 6)$ cm. Determina il perimetro del triangolo. $[6(1 + \sqrt{2} + \sqrt{3})\text{ cm}]$

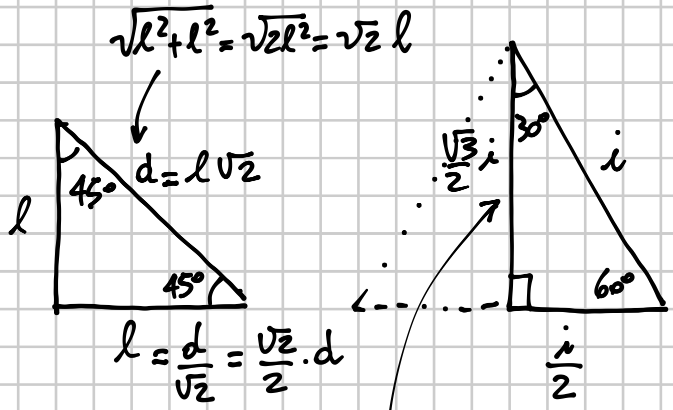


$\overline{AB} = 2\sqrt{3} + 6$

$\overline{AH} = x$

$\Downarrow$

$\overline{AC} = x\sqrt{2}$



$$\sqrt{i^2 - \left(\frac{i}{2}\right)^2} = \sqrt{i^2 - \frac{i^2}{4}} = \sqrt{\frac{3}{4}i^2} = \frac{i}{2}\sqrt{3} = \frac{\sqrt{3}}{2}i$$

$\overline{CH} = x$

$$\overline{CH} = \overline{CB} \cdot \frac{\sqrt{3}}{2} = \cancel{2}(2\sqrt{3}+6-x) \cdot \frac{\sqrt{3}}{\cancel{2}} =$$

$$= \sqrt{3}(2\sqrt{3}+6-x)$$

devono essere uguali

$$x = \sqrt{3}(2\sqrt{3}+6-x)$$

$$x = 6 + 6\sqrt{3} - \sqrt{3}x \qquad x + \sqrt{3}x = 6 + 6\sqrt{3}$$

$$x(1+\sqrt{3}) = 6(1+\sqrt{3}) \Rightarrow x = 6$$

$$2p = 6\sqrt{2} + 4\sqrt{3} + 2\sqrt{3} + 6 =$$
$$= 6\sqrt{3} + 6\sqrt{2} + 6 =$$
$$= 6(\sqrt{3} + \sqrt{2} + 1)$$

$\overline{AC} = 6\sqrt{2}$ $\quad \overline{CB} = 2(2\sqrt{3} + \cancel{6} - \cancel{6}) = 4\sqrt{3}$