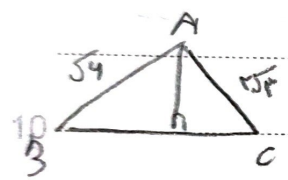


١) $(\sin 135^\circ + \sin 45^\circ)(\cos 135^\circ - \cos 45^\circ) = \left(\frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2}\right)\left(\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}\right) = \frac{1}{2} - \frac{3}{2} = \boxed{\frac{-1}{1}}$

٥) $\frac{1 + 3 \tan^2 45^\circ}{\cos 135^\circ + 2 \sin 135^\circ} = \frac{1 + 3 \times \left(\frac{1}{\sqrt{3}}\right)^2}{2 \times \left(\frac{\sqrt{3}}{2}\right)^2 + 2 \times \left(\frac{\sqrt{3}}{2}\right)^2} = \frac{1}{4} = \boxed{\frac{1}{4}}$



مربع $\frac{\sqrt{2}}{2} \times \sqrt{2} \rightarrow$

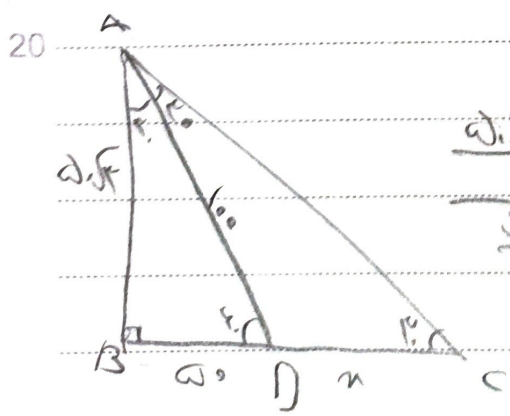
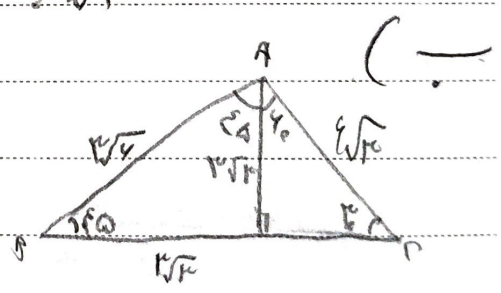
$AH = \sqrt{2} \times \sqrt{4} = \boxed{\sqrt{2}}$

في المثلث AHC $(2\sqrt{3})^2 - (\sqrt{2})^2 = 12 - 2 = 10$
 $HC = \sqrt{10} = \boxed{3}$

٢) الف
 HC?

١٥) $HC = \frac{\sqrt{2}}{2} \times \sqrt{2} \rightarrow \frac{1}{\frac{\sqrt{2}}{2}} = \sqrt{2} \rightarrow \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} = 9\sqrt{2}$

$AH = (9\sqrt{2})^2 - (9)^2 = 162 - 81 = 81$
 $B = 45^\circ$



$\frac{5\sqrt{4}}{1} = \frac{1}{\frac{\sqrt{2}}{2}} = 10$

$BD = \frac{1}{2} \times \sqrt{2}$

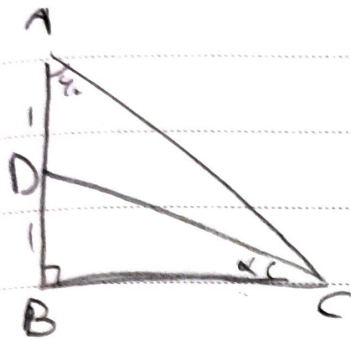
٣) الف

$AD = DC = 10$

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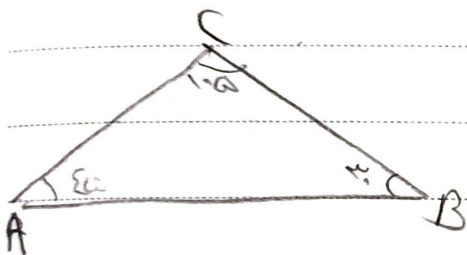
$$(r)^2 + \left(\frac{\sqrt{r}}{r}\right)^2 = r^2 \rightarrow \varepsilon + \frac{r}{\varepsilon} = r$$

$$r = \varepsilon$$

$$BCD = (1)^2 + (\sqrt{r})^2 = 1 + r$$

$$DC = \sqrt{r}$$

$$\sin \alpha = \frac{1}{\sqrt{r}}$$



$$\gamma_0 + \phi = 1.0$$

$$\sin 1.0 = \sin(\gamma_0 + \phi) = \sin \gamma_0 \cos \phi + \sin \phi \cos \gamma_0$$

$$\frac{AB}{\sin 1.0} = \frac{AC}{\sin \phi} = \frac{BC}{\sin \gamma_0}$$

$$\frac{AB}{AC} = \frac{\sin 1.0}{\sin \phi} \Rightarrow \frac{\frac{\sqrt{r}}{r} \times \frac{\sqrt{r}}{r} + \frac{\sqrt{r}}{r} \times \frac{1}{r}}{\frac{1}{r}} =$$

$$\frac{\frac{\sqrt{r}}{r} \left(\frac{\sqrt{r}}{r} + \frac{1}{r} \right)}{\frac{1}{r}} = \left(\frac{\sqrt{r} + 1}{r} \right) \sqrt{r} \frac{\sqrt{4 + \sqrt{r}}}{r}$$

$$\frac{S_{ABE}}{S_{BCD}} = \frac{\frac{1}{r} \times r \times \varepsilon \times \sin \theta}{\frac{1}{r} \times r \times \frac{1}{r} \times \sin \theta} = \left(\frac{r}{9} \right)$$

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$$a \times b \times \sin \theta \rightarrow c \times \frac{1}{r} \times \sqrt{r} \rightarrow \boxed{4\sqrt{r}}$$

(الف)

$$r \times \frac{1}{r} \times \sin \alpha \rightarrow 4 \times \frac{5r}{r} \rightarrow 4\sqrt{r}$$

(ب)

$$\tan \theta = \frac{y_2 - y_1}{x_2 - x_1}$$

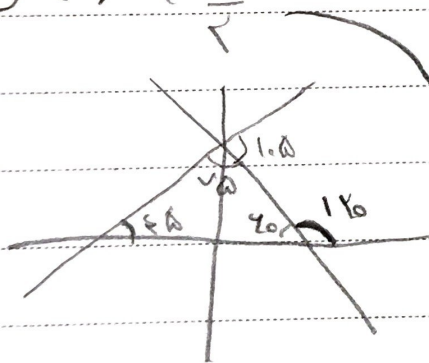
$$1 + \tan^2 = \frac{1}{\cos^2}$$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{1}{r} \rightarrow 1 + \frac{1}{r^2} = \frac{1}{\cos^2} \rightarrow \frac{r}{\cos^2} = \cos^2$$

$$\boxed{\cos = \frac{r}{\sqrt{r}}}$$

$$y = mx + b \rightarrow y = mx + \frac{a}{r}$$

$$y = mx + b \rightarrow y = mx + \frac{a}{r}$$



$$\tan \theta = \frac{y_2 - y_1}{x_2 - x_1} = \frac{1}{r}$$

$$\tan 110^\circ = -\sqrt{r} = m$$

$$mb = (-\sqrt{r}) \times \left(\frac{a}{r}\right) = \boxed{-\frac{a\sqrt{r}}{r}}$$

$$f(x) = -\cos x + \cos x + \cot x = \cot x$$

$$\cot 110^\circ = \boxed{-\sqrt{r}}$$

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$$\frac{+\cos x - \sin x}{-\cos x + \sin x} = \frac{(\cos x - \sin x)}{-(\cos x - \sin x)} = \boxed{-1}$$

10

5

10

15

20