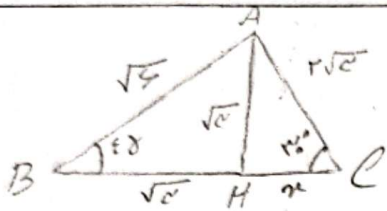


$$\text{الف)} \quad (\sin 15^\circ + \sin 45^\circ)(\cos 15^\circ - \cos 45^\circ) = \left(\frac{\sqrt{2}}{2} + \left(-\frac{\sqrt{2}}{2}\right)\right)\left(\frac{\sqrt{2}}{2} - \left(-\frac{\sqrt{2}}{2}\right)\right)$$

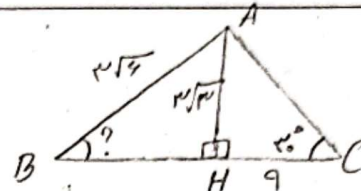
$$= \left(\frac{\sqrt{2}}{2}\right)^2 - \left(\frac{\sqrt{2}}{2}\right)^2 = \frac{2}{4} - \frac{2}{4} = -\frac{1}{2}$$

$$\text{ب)} \quad \frac{1 + \cos 110^\circ}{\cos 110^\circ + 2 \cos 110^\circ} = \frac{1 + 2 \left(\frac{\sqrt{2}}{2}\right)^2}{\cos 110^\circ + 2 \cos 110^\circ} = \frac{1+1}{2+1} = \frac{2}{3}$$



$$x = \cot 45^\circ \times AH = \sqrt{2} \times \sqrt{2} = 2$$

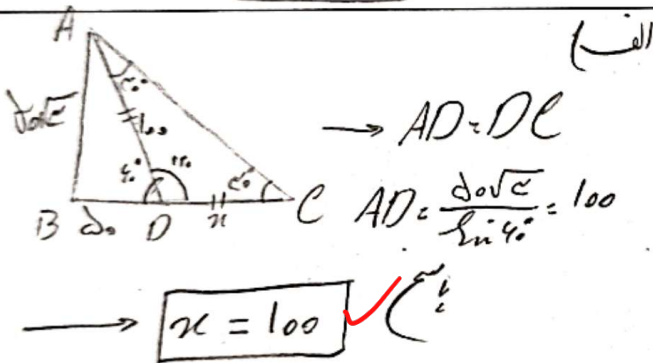
$$\boxed{HE = 2}$$



$$AH = \tan 45^\circ \times 9 = \frac{\sqrt{2}}{2} \times 9 = 4.5\sqrt{2}$$

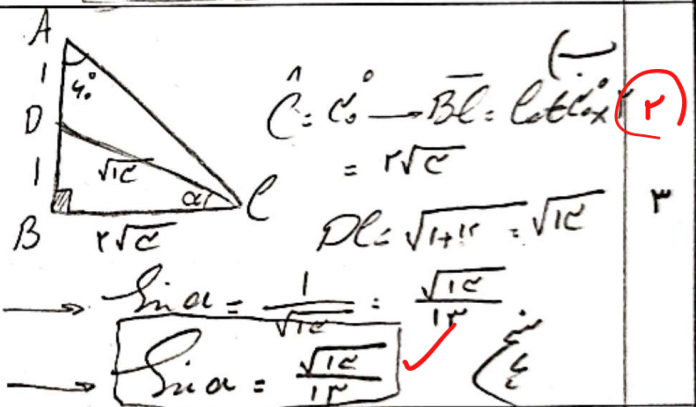
$$\sin B = \frac{AH}{AC} = \frac{4.5\sqrt{2}}{9\sqrt{2}} = \frac{1}{2} \Rightarrow B = 30^\circ$$

$$\boxed{B = 30^\circ}$$



$$AD = \frac{100\sqrt{2}}{\sin 45^\circ} = 100$$

$$\boxed{x = 100}$$



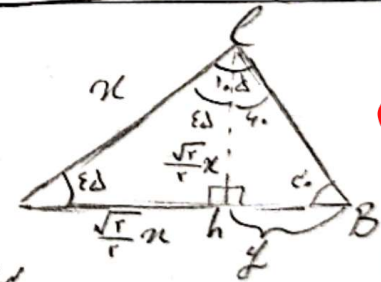
$$\sin \alpha = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$\boxed{\sin \alpha = \frac{\sqrt{2}}{2}}$$

$$Ah = hC = \sin 45^\circ \times x = \frac{x\sqrt{2}}{2}$$

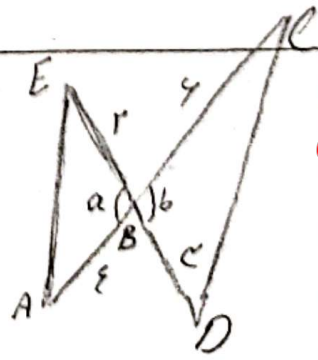
$$y = \cot 45^\circ \times \frac{x\sqrt{2}}{2} = \sqrt{2} \times \frac{x\sqrt{2}}{2} = \frac{x}{2}$$

$$\frac{AB}{AC} = \frac{\frac{x\sqrt{2}}{2} + \frac{x\sqrt{2}}{2}}{x} = \frac{\sqrt{2} + \sqrt{2}}{2} = \sqrt{2}$$



$$\hat{a} = \hat{b} \Rightarrow \sin a = \sin b$$

$$\frac{S_{ABE}}{S_{BED}} = \frac{\sin a \times \frac{1}{2} \times \frac{1}{2}}{\sin b \times \frac{1}{2} \times \frac{1}{2}} = \frac{1}{9}$$



$$\text{الف) } \sum = \left(\sin 11.6^\circ \times r_x \times \frac{1}{r} \right) \times r =$$

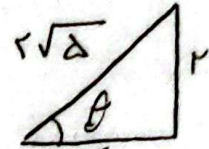
$$\frac{\sqrt{3}}{2} \times r_x \times \frac{1}{r} = \boxed{\frac{\sqrt{3}}{2}} \quad \left(\begin{array}{c} \text{سنگ} \\ \text{ع} \end{array} \right)$$

$$\text{ب) } \sum = \frac{1}{r} \times r_x \times \sin 11.6^\circ \times \frac{1}{r}$$

$$\frac{1}{r} \times \frac{\sqrt{3}}{2} = \boxed{\frac{\sqrt{3}}{2}} \quad \left(\begin{array}{c} \text{سنگ} \\ \text{ع} \end{array} \right)$$

$$\cos \theta = \frac{\frac{r}{\sqrt{8}}}{\frac{r}{\sqrt{8}}} = \frac{r\sqrt{8}}{\Delta}$$

$$\boxed{\cos \theta = \frac{r\sqrt{8}}{\Delta}} \quad \left(\begin{array}{c} \text{سنگ} \\ \text{ع} \end{array} \right)$$



آر ایک مثلث تصور کریں

$$\tan(-4.0^\circ) = m = -\sqrt{3}$$

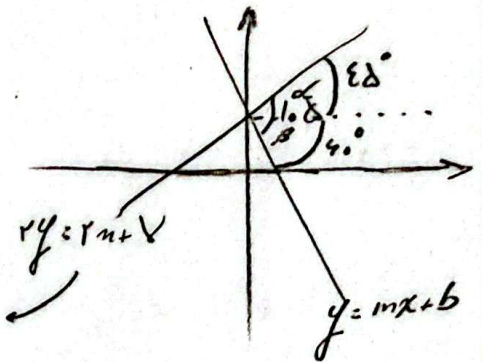
$$r_x = -\sqrt{3}(0) + b$$

$$r_x = b$$

$$\boxed{mb = \frac{-\Delta\sqrt{3}}{r}} \quad \left(\begin{array}{c} \text{سنگ} \\ \text{ع} \end{array} \right)$$

$$y = x + r_x$$

$$\tan \alpha = 1$$



$$f\left(\frac{\Delta\pi}{4}\right) = \cos\left(\pi + \frac{\Delta\pi}{4}\right) + \sin\left(\frac{\pi}{r} - \frac{\Delta\pi}{4}\right) - \tan\left(\frac{c\pi}{r} + \frac{k\pi}{4}\right)$$

$$-\cos \frac{\Delta\pi}{4} + \cos \frac{\Delta\pi}{4} + \cot \frac{\Delta\pi}{4} = \cot \frac{\Delta\pi}{4} = \boxed{-\sqrt{3}} \quad \left(\begin{array}{c} \text{سنگ} \\ \text{ع} \end{array} \right)$$

$$\frac{\sin\left(\pi + \frac{\pi}{r} + n\right) + \cos\left(\sqrt{\pi + \frac{\pi}{r}} - n\right)}{\cos(\pi + n) - \sin(-n)} = \frac{\sin\left(\frac{\pi}{r} + n\right) + \cos\left(\frac{c\pi}{r} - n\right)}{\cos(\pi + n) - \sin(-n)}$$

$$+ \frac{\cos n - \sin n}{-\cos n + \sin n} = \frac{-(-\cos n - \sin n)}{-\cos n + \sin n} = \boxed{-1} \quad \left(\begin{array}{c} \text{سنگ} \\ \text{ع} \end{array} \right)$$