

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

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

$$\frac{1+1}{2+1} = \frac{2}{3} = \frac{1}{1.5}$$

$$\sqrt{6} \times \cos 45^\circ = \sqrt{2} \in \overline{AH}$$

$$\hat{C} = 30^\circ \quad HC = 2 \leftarrow 2\sqrt{2} \times \frac{\sqrt{2}}{2} = 2$$

100X

$$9 \times \frac{2}{\sqrt{2}} = 9\sqrt{2} = \overline{AC}$$

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

$$\overline{AH} = 9\sqrt{2} \times \frac{1}{2} = 4.5\sqrt{2}$$

$$\hat{B} = 45^\circ$$

120X

$$\overline{AB} = 50\sqrt{2}$$

$$x = 100$$

$$\overline{AD} = 50\sqrt{2} \times \frac{2}{\sqrt{2}} = 100$$

$$\overline{BD} = 50$$

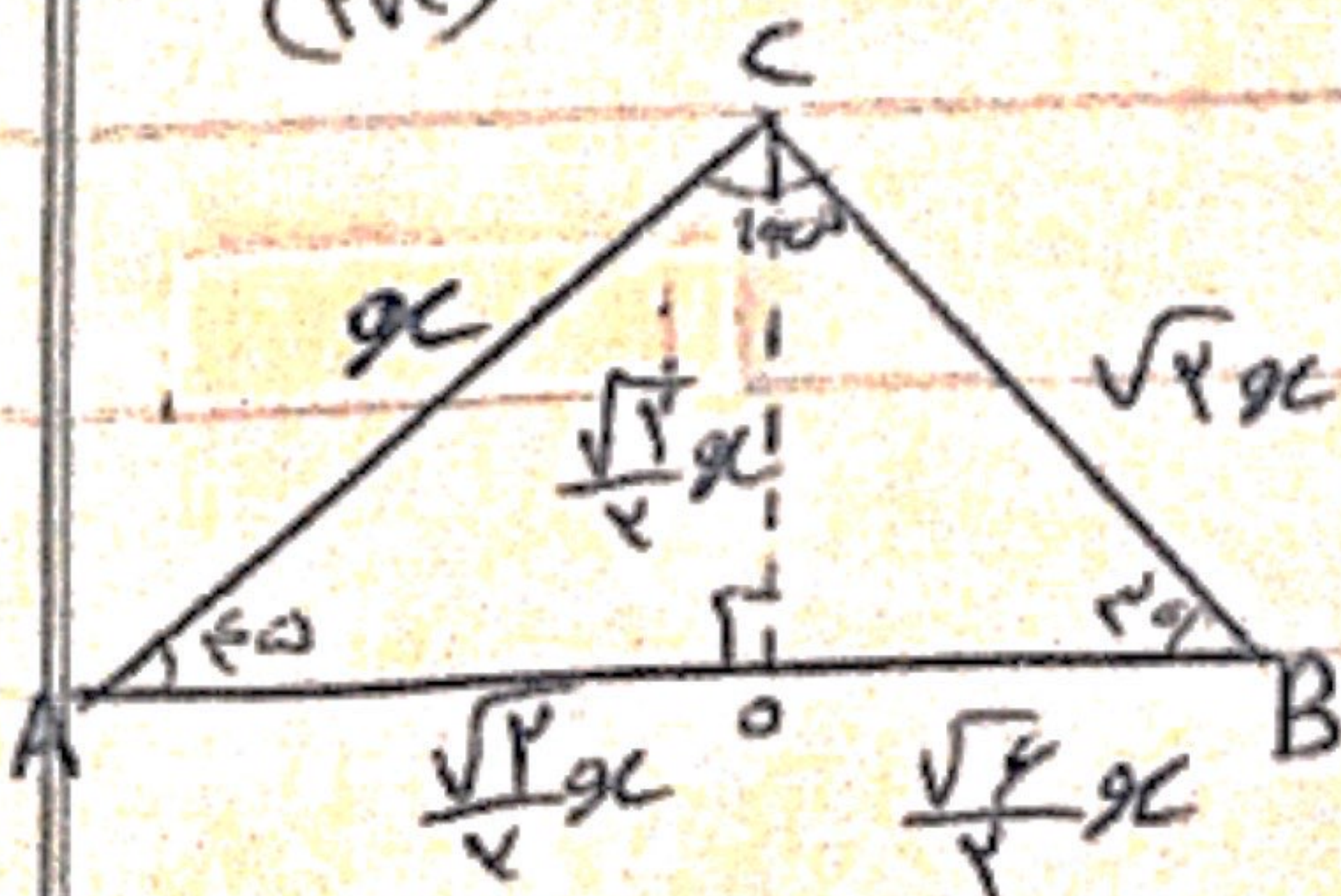
$$\overline{AC} = 100\sqrt{2} \leftarrow \text{ضلع روبه بر زاویه 45 درجه مضروب از است}$$

$$\overline{BC} = 100\sqrt{2} \times \frac{\sqrt{2}}{2} = 100$$

$$\overline{AB} = 2 \quad \overline{AC} = 4 \quad \overline{BC} = 4 \times \frac{\sqrt{2}}{2} = 2\sqrt{2}$$

$$1+12=13 \Rightarrow \overline{DC} = \sqrt{13}$$

$\frac{1}{\sqrt{13}} = \frac{\sqrt{13}}{13}$

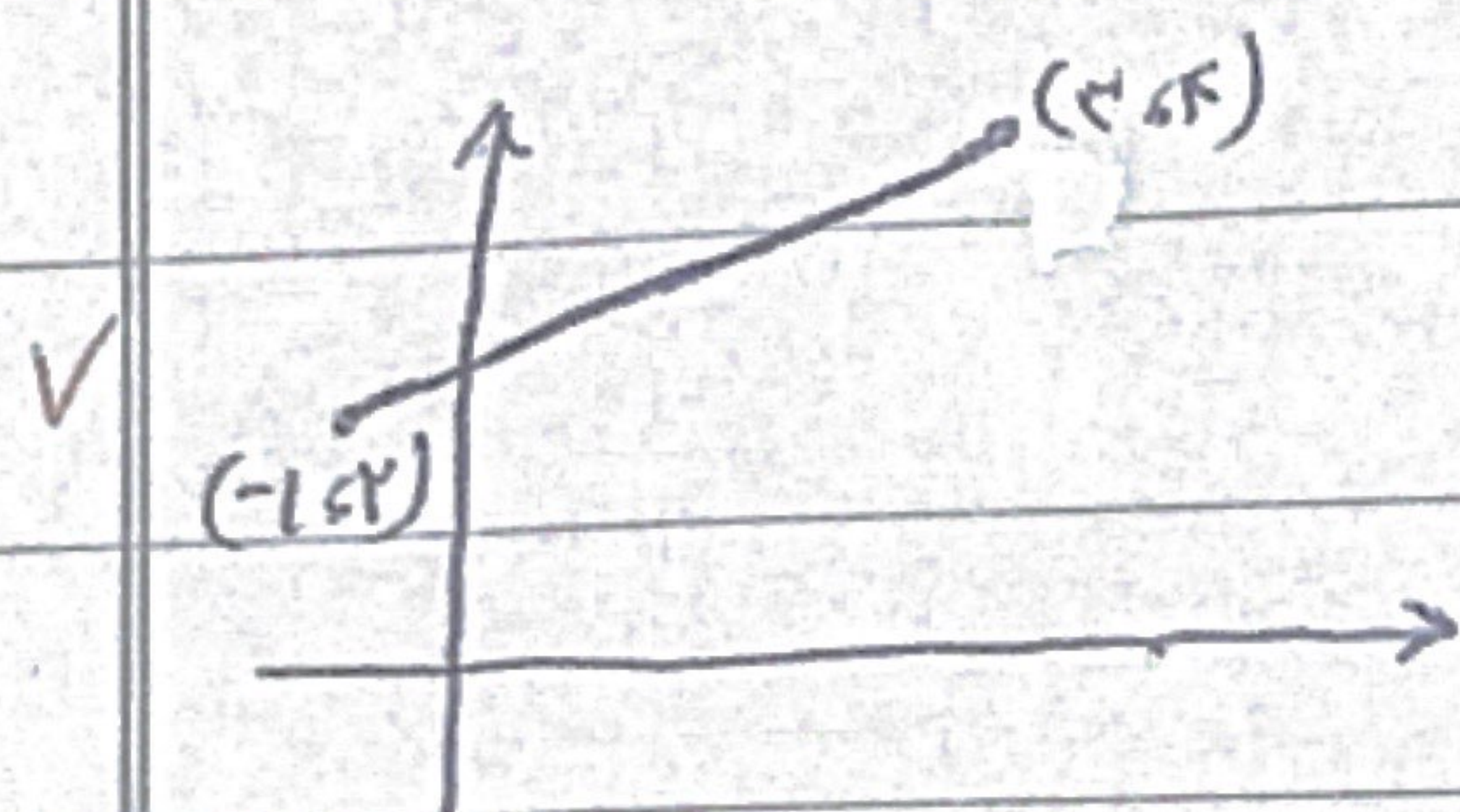


$$\frac{\left(\frac{\sqrt{2}+\sqrt{2}}{2}\right)90}{90} = \frac{\sqrt{2}+\sqrt{2}}{2}$$

$$\frac{4 \times 2 \times \frac{1}{2} \times \sin 90}{4 \times 4 \times \frac{1}{2} \times \sin 90} = \frac{4}{4}$$

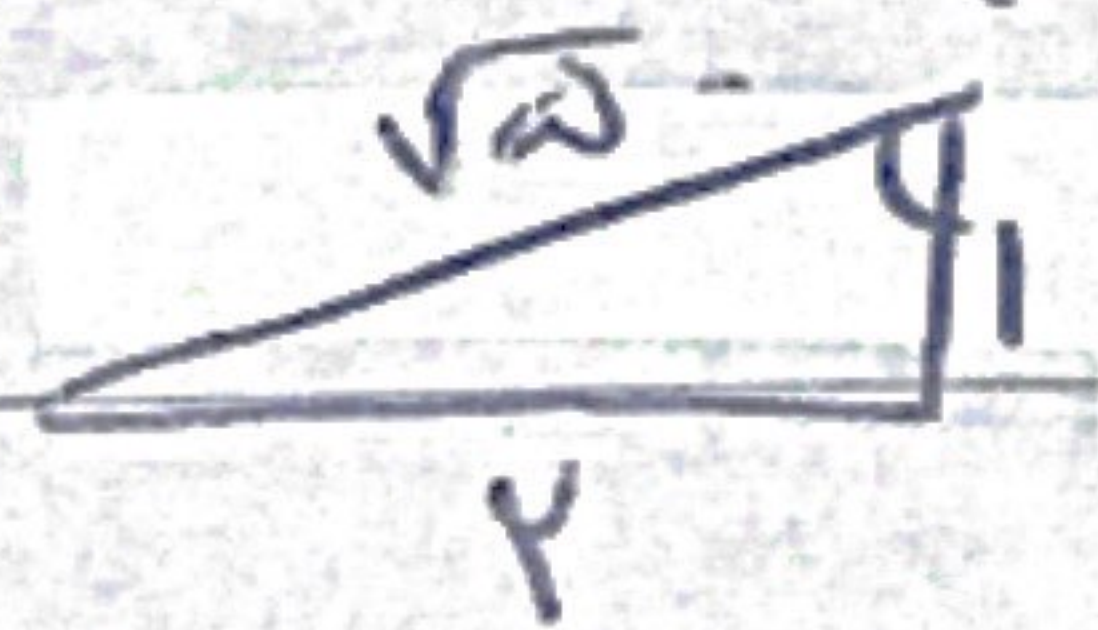
$$9 \quad r\left(\frac{1}{r} \times r \times r \times \sin(120^\circ)\right) = 4\sqrt{r}$$

$$(r \times r \times \frac{1}{r} \times \sin(120^\circ)) = 4\sqrt{r}$$



$$\tan \theta = \frac{y}{x} = \frac{1}{1} \rightarrow \cos \theta = \frac{1}{\sqrt{2}} \checkmark$$

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



$$\rightarrow \tan = 1 \Rightarrow \text{max}$$

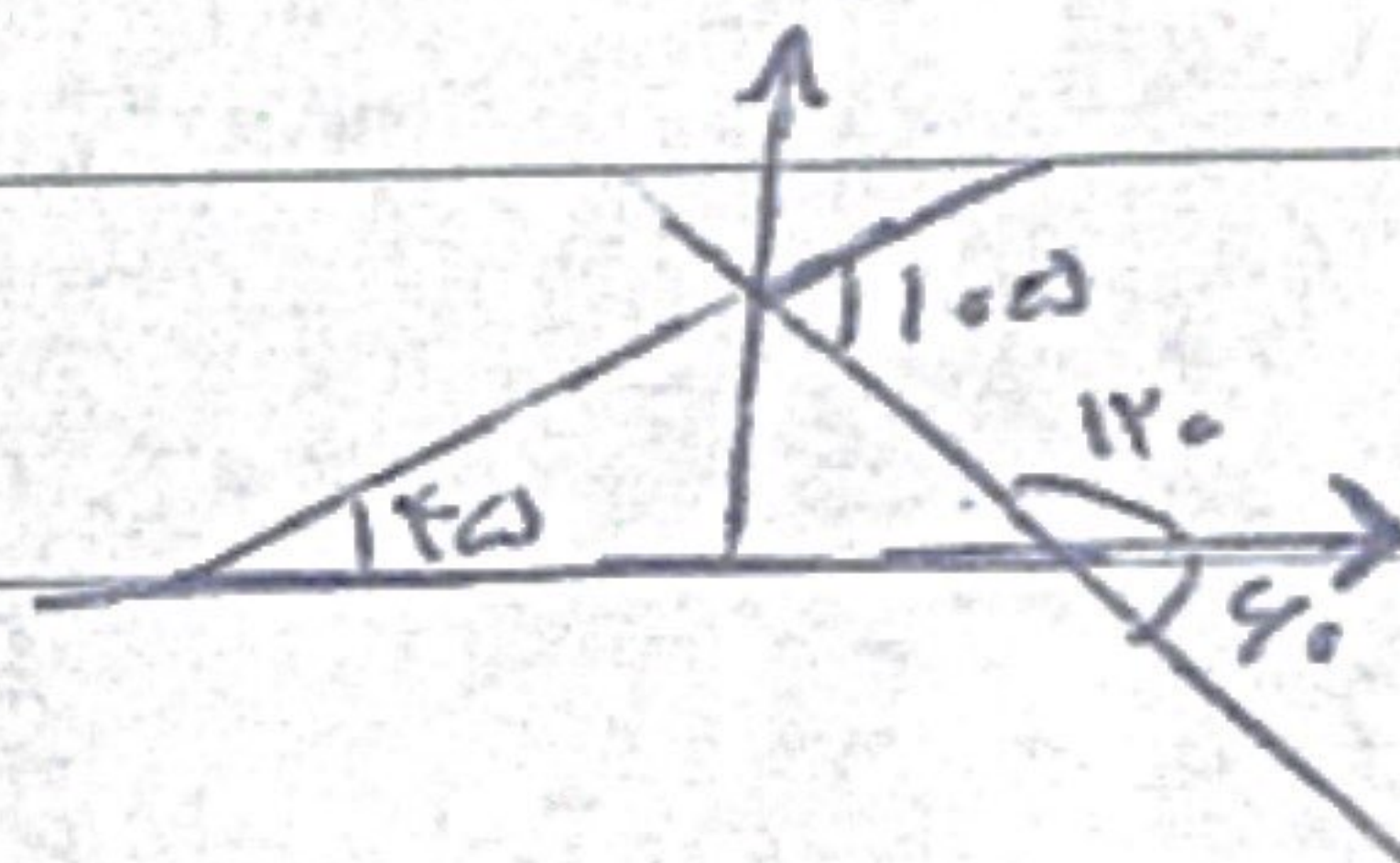
$$1 \quad y = 9x + \frac{a}{y}$$

$$y = mx + b$$

$$b = \frac{a}{y} \quad m = \sqrt{r}$$

$$\tan 45^\circ = \sqrt{r}$$

$$\tan 135^\circ = -\sqrt{r}$$



$$mb = -\frac{a\sqrt{r}}{y}$$

$$9 \quad f\left(\frac{5\pi}{4}\right) = \cos\left(\frac{11\pi}{4}\right) + \sin\left(-\frac{\pi}{4}\right) - \tan\left(\frac{\sqrt{\pi}}{4}\right)$$

$$\frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2} - \sqrt{2} = -\sqrt{2}$$

$$10 \quad \sin\left(\frac{14\pi}{4} + 9x\right) = \cos 9x$$

$$\cos\left(\frac{14\pi}{4} - 9x\right) = -\sin 9x$$

$$\cos(3\pi + 9x) = -\cos 9x$$

$$\sin(4\pi - 9x) = -\sin 9x$$

$$\frac{\cos 9x - \sin 9x}{\sin 9x - \cos 9x} = -1$$