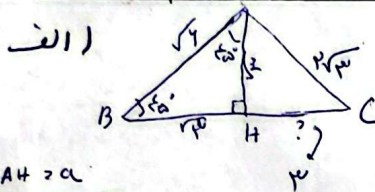


نام و نام خانوادگی بار صبیح پاسخنامه تشریحی تکلیف شماره ۲۰ کلاس (هم زحمت) B

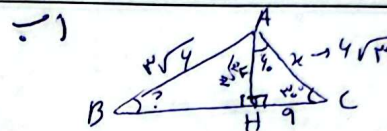
الف) $(\sin 135^\circ + \sin 30^\circ) (\cos 315^\circ - \cos 180^\circ) = \left(\frac{\sqrt{2}}{2} + \frac{1}{2}\right) \left(\frac{\sqrt{2}}{2} - (-1)\right) = \left(\frac{\sqrt{2}+1}{2}\right) \left(\frac{\sqrt{2}+2}{2}\right) = \frac{1}{2} - \frac{3}{2} = -\frac{1}{2}$

ب) $\frac{1 + 3 \tan^2 45^\circ}{4 \cos^2 330^\circ + 3 \cos^2 225^\circ} = \frac{4}{4} = 1$

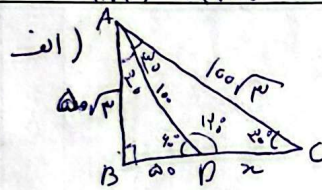
$\tan 45^\circ = \frac{1}{1} = 1$ $\cos 330^\circ = \frac{\sqrt{3}}{2}$ $\cos 225^\circ = -\frac{\sqrt{2}}{2}$



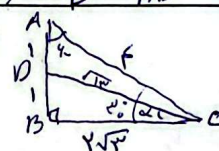
الف) $AH = x$
 $AB = x\sqrt{2}$
 $\rightarrow AH = \sqrt{3}$
 $HC = AC^2 - AH^2$
 $(2\sqrt{3})^2 - (\sqrt{3})^2 = 12 - 3 = 9 \rightarrow \sqrt{9} = 3$



ب) $\frac{\sqrt{2}}{2} \times x = 9$
 $x = \frac{9}{\frac{\sqrt{2}}{2}} = \frac{18}{\sqrt{2}} = 9\sqrt{2}$
 $\sin \beta = \frac{AH}{AB} = \frac{3\sqrt{3}}{2\sqrt{4}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{3\sqrt{3}}{4} = \frac{\sqrt{3}}{4}$



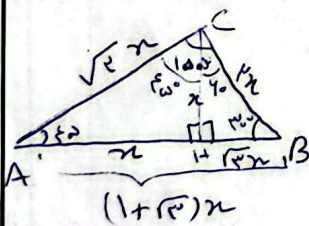
الف) $\sin 45^\circ = \frac{\sqrt{2}}{2} = \frac{AB}{AD} = \frac{100\sqrt{2}}{AD} \rightarrow AD = 200$
 $\frac{AB}{AC} = \frac{1}{2} = \frac{100\sqrt{2}}{AC} \rightarrow AC = 200\sqrt{2}$
 $(100\sqrt{2})^2 - (100\sqrt{2})^2 = 10000 - 10000 = 0$



ب) $\sin 45^\circ = \frac{BC}{AC} = \frac{100}{100\sqrt{2}} = \frac{1}{\sqrt{2}} \rightarrow BC = 100$

$DC = \sqrt{BC^2 + BD^2} = \sqrt{100^2 + 100^2} = 100\sqrt{2}$

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



ب) $x = \frac{\sqrt{2}}{2} AC = \frac{\sqrt{2}}{2} (1+\sqrt{3})x$
 $\sin 45^\circ = \frac{\sqrt{2}}{2} = \frac{HB}{CB} = \frac{x}{x}$

$\frac{AB}{AC} = \frac{1+\sqrt{3}}{2} = \frac{1+\sqrt{3}}{2}$

$S_{ABE} = \frac{1}{2} \times \sin \alpha \times 2 \times x = \frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$
 $S_{BCD} = \frac{1}{2} \times 2 \times x \times \sin \alpha = \frac{1}{2} \times 2 \times \frac{1}{2} = \frac{1}{2}$

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

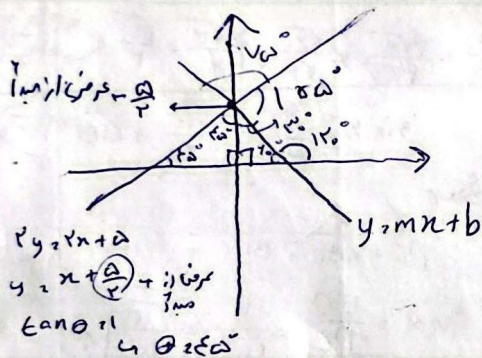
الف) $2 \times \frac{1}{2} \times 2 \times \frac{2}{\sqrt{2}} \times \sin 120^\circ = 4\sqrt{2}$

$$5) \frac{1}{r} \times 3 \times r \times \sin 120^\circ = \underline{3\sqrt{3}}$$

$$y = ax + b \rightarrow y = \frac{1}{r}x + b \quad \tan \theta = \frac{1}{r}$$

$$\text{سب} : \frac{y_Q - y_P}{x_Q - x_P} = \frac{r}{f} = \frac{1}{r}$$

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



$$\tan 110^\circ = \frac{\sqrt{r}}{-\frac{1}{r}} = -\sqrt{r}$$

$$y = -\sqrt{r} x + (b) \frac{\omega}{r}$$

$$\frac{\omega}{r} = -\sqrt{r(\cdot) + b} \rightarrow \frac{\omega}{r}$$

$$m_2 = \sqrt{\mu} \quad b = \frac{A}{r} \rightarrow m b_2 = \frac{-\omega \sqrt{\mu}}{r}$$

$$\frac{\omega \pi}{4} \text{ at } \omega_0 = \pi$$

$$\cos(\pi + 120^\circ) + \sin\left(\frac{\pi}{4} - 120^\circ\right) - \tan\left(\frac{3\pi}{4} + 120^\circ\right)$$

$$\cos(120^\circ) \neq \cos(120^\circ) - \cot(120^\circ)$$

$$\cot 150^\circ = \frac{-\frac{\sqrt{3}}{2}}{\frac{1}{2}} = -\sqrt{3}$$

$$7. \sqrt{3} = -\cot(150^\circ)$$

$$\frac{\sin\left(\frac{10\pi}{r} + n\right) + \cos\left(\frac{10\pi}{r} - n\right)}{\cos(4\pi + n) - \sin(4\pi - n)} = \frac{\cos(n) - \sin(n)}{-\cos(n) + \sin(n)} = \frac{\cos(n) - \sin(n)}{-(\cos(n) - \sin(n))}$$

$\boxed{-1}$?