نام و نام خانوادگی نادیا اسلامی .... پاسخنامه تشریحی تکلیف شماره ۲۵ کلاس دهم دختر B

۱

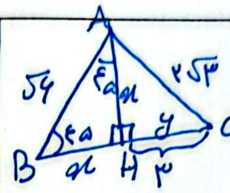
$$\left(\frac{\sqrt{2}}{2}+\left(-\frac{\sqrt{3}}{2}\right)\right)\times\left(\frac{\sqrt{2}}{2}-\frac{\sqrt{3}}{2}\right)\longrightarrow\left(\frac{\sqrt{2}}{2}-\frac{\sqrt{3}}{2}\right)^2=\frac{2}{4}-\frac{\sqrt{6}}{2}+\frac{3}{4}=\boxed{\frac{5}{4}-\frac{\sqrt{6}}{2}}$$

$$\boxed{\frac{5}{4}-\frac{\sqrt{6}}{2}}$$

$$\frac{1+1}{3+1}=\frac{2}{4}=\boxed{\frac{1}{2}}$$

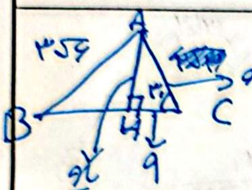
۲

الف)



$$2x^2=6$$
$$x^2=3$$
$$\boxed{x=\sqrt{3}}$$
$$(\sqrt{3})^2+y^2=12$$
$$3+y^2=12$$
$$y^2=9\rightarrow\boxed{y=3}$$

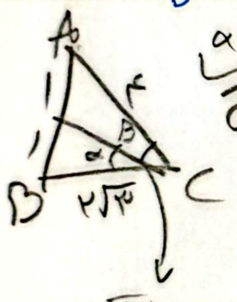
ب)



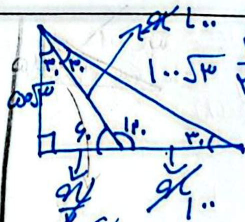
$$\left(\frac{x}{2}\right)^2+(9)^2=x^2$$
$$\frac{4}{3}\times 81=\frac{3x^2}{4}\times\frac{4}{3}$$
$$108=x^2$$
$$\boxed{6\sqrt{3}=x}$$
$$\boxed{\frac{x}{2}=3\sqrt{3}}$$

$$\frac{3\sqrt{6}}{\sin 30}=\frac{6\sqrt{3}}{\sin\hat{B}}$$
$$6\sqrt{6}=\frac{6\sqrt{3}}{\sin\hat{B}}$$
$$6\sqrt{6}\sin\hat{B}=6\sqrt{3}$$
$$\sin\hat{B}=\frac{6\sqrt{3}}{6\sqrt{6}}=\frac{1}{\sqrt{2}}$$

۳

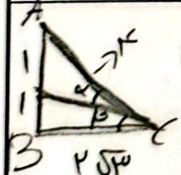


$$\underbrace{\alpha+\beta}_{\hat{C}}=30$$
$$\hat{C}\rightarrow 30^\circ$$
$$\boxed{\sin\alpha=\frac{1}{\sqrt{13}}}$$
$$2^2+x^2=16$$
$$x^2=12$$
$$x=2\sqrt{3}$$
$$1+12=y$$
$$13=y^2$$
$$\sqrt{13}=y$$



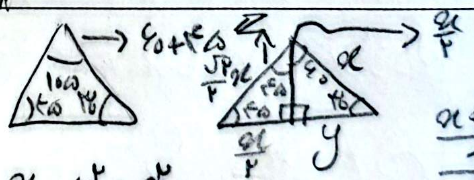
$$\frac{4}{3}\times 2500\times 3=\frac{3x^2}{4}\times\frac{4}{3}$$
$$100\sqrt{3}$$
$$10000=x^2$$
$$100=x$$

۴



$$\underbrace{\alpha+\beta}_{\hat{C}}=30$$
$$\hat{C}=30^\circ\longrightarrow$$ ضلع مقابل به زاویه ۳۰ نصف وتر است

$$\boxed{\sin\beta=\frac{1}{\sqrt{13}}}$$
$$2^2+x^2=16$$
$$x^2=12$$
$$x=2\sqrt{3}$$
$$1+12=y$$
$$13=y^2$$
$$\sqrt{13}=y$$



$$\frac{x^2}{4}+y^2=x^2$$
$$y^2=\frac{3x^2}{4}$$
$$y=\frac{\sqrt{3}x}{2}$$
$$\frac{2x^2}{4}=z^2$$
$$\frac{\sqrt{2}}{2}x=z$$
$$\frac{\frac{x+\sqrt{3}x}{4}}{\frac{\sqrt{2}}{2}}$$
$$\frac{x+\sqrt{3}x}{\sqrt{2}}$$

۵

$$\frac{\frac{1}{2}\sin B_2\times 2\times 4}{\frac{1}{2}\sin B_1\times 6\times 3}=\frac{8}{18}=\boxed{\frac{4}{9}}$$
$$B_2=B_1$$

۶

الف) $۳ \times ۴ \times \frac{\sqrt{۳}}{۲} = ۶\sqrt{۳}$

ب) $۳ \times ۴ \times \frac{\sqrt{۳}}{۲} = ۶\sqrt{۳}$

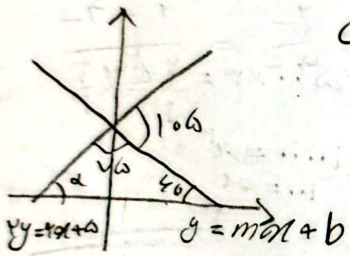
۷

$\frac{-۴+۲}{-۳-۱} = \frac{-۲}{-۴} = ۰/۵$ $\quad$ $۲/۵ + ۰/۵x = y$

$\text{if } y = ۰ \longrightarrow ۰/۵x = -۲/۵ \Longrightarrow \boxed{x = -۵}$

$\frac{1}{\sqrt{(\frac{1}{۲})^۲+1}} = \frac{1}{\sqrt{\frac{1}{۴}+1}} = \frac{1}{\sqrt{\frac{۵}{۴}}} = \frac{۲}{\sqrt{۵}} \longrightarrow \cos\theta$

۸



$y = (1)x + \frac{۵}{۲}$

$m = \tan\alpha = 1 \longrightarrow \alpha = ۴۵^\circ$

$\tan ۹۰^\circ = \boxed{\sqrt{۳}}$

$\boxed{b_۰ = \frac{۵}{۲}}$

چون هر دو در یک نقطه محور y ها را قطع کرده‌اند

۹

$f(x) = \cos(\pi + x) + \sin(\frac{\pi}{۲} - x) - \tan(\frac{۳\pi}{۲} + x)$

$f(x) = -\cancel{\cos x} + \cancel{\cos x} - (-\cot x)$

$f(x) = \boxed{\cot x}$

$f(\frac{۵\pi}{۶}) = \cot\frac{۵\pi}{۶} \longrightarrow \boxed{\sqrt{۳}}$

۱۰

$$\frac{\sin(\frac{۱۷\pi}{۲}+x) + \cos(\frac{۱۵\pi}{۲}-x)}{\cos(۳\pi+x) - \sin(۶\pi-x)}$$

$$\downarrow$$

$$\frac{\cos + \sin}{-\cos - \sin}$$

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