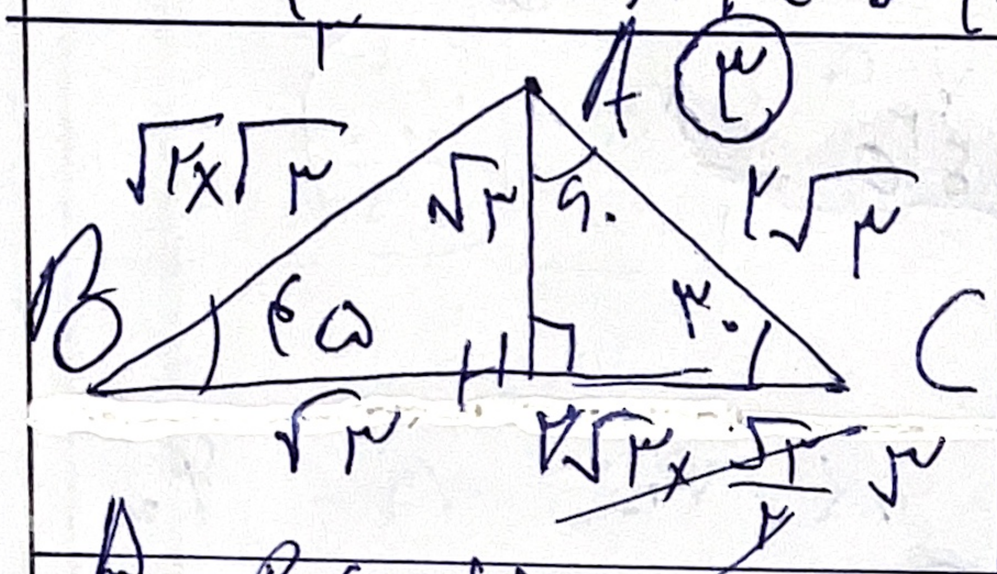
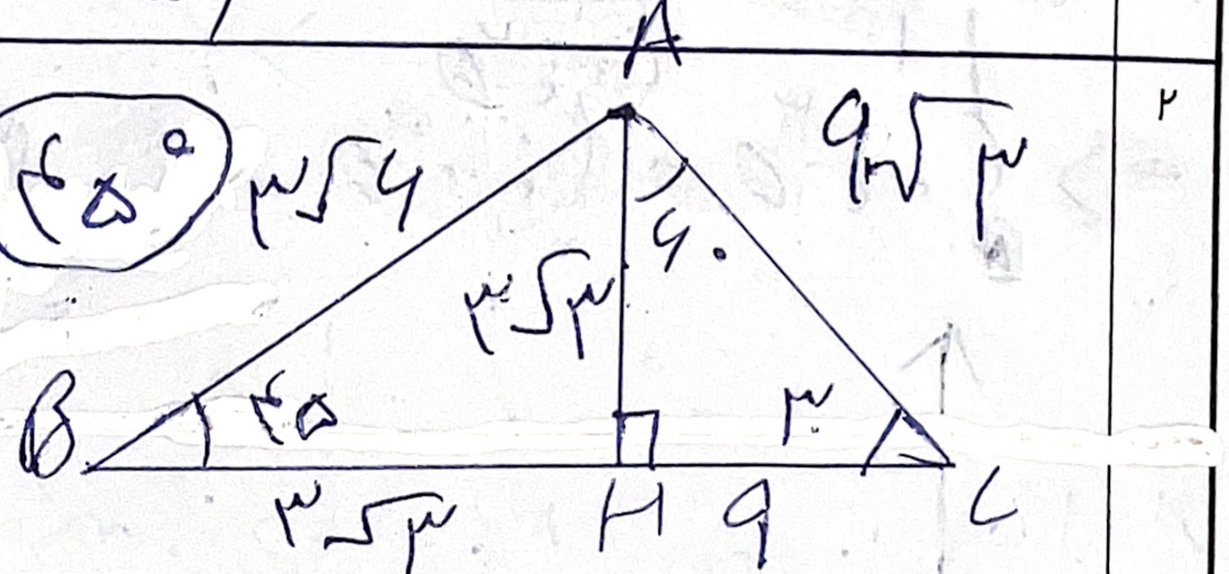
نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۲ کلاس ..... A .....

الف) $\frac{\sin 45 - \sin 90}{\cos 45 + \cos 30} \times \frac{\sin(180-45) + \sin(360-90)}{\cos(360-45) - \cos(180-30)} = \left(\frac{\sqrt{2}}{2} - \frac{\sqrt{3}}{2}\right)\left(\frac{\sqrt{2}}{2} + \frac{\sqrt{3}}{2}\right) = \frac{2-3}{4} = \frac{-1}{4}$

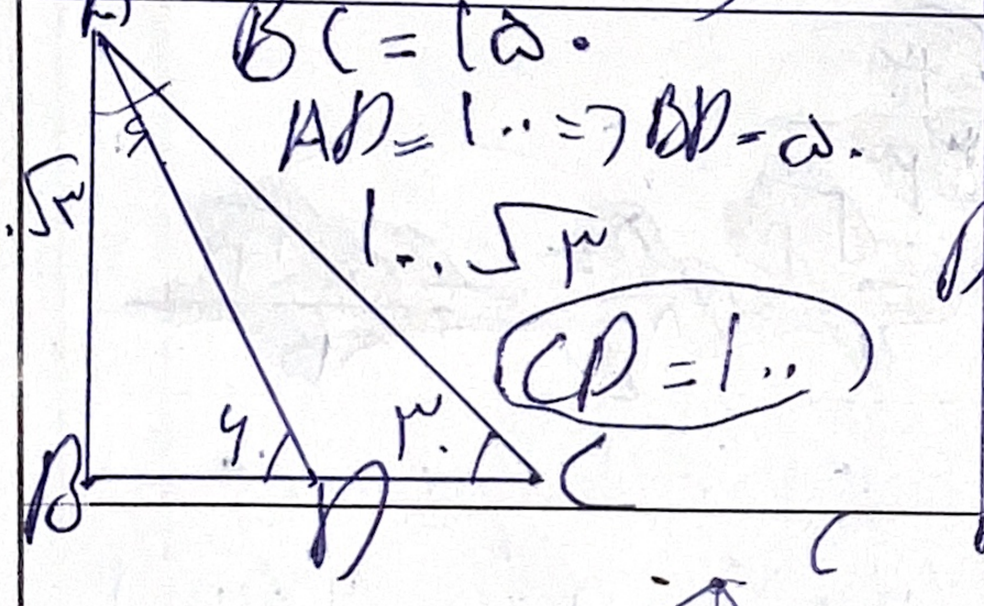
ب) $\frac{1 + \sin 90 \cos(180+30)}{4\cos^2(360-30) + 2\cos^2(180+45)} = \frac{1+1}{3+1} = \frac{2}{4} = \frac{1}{2}$

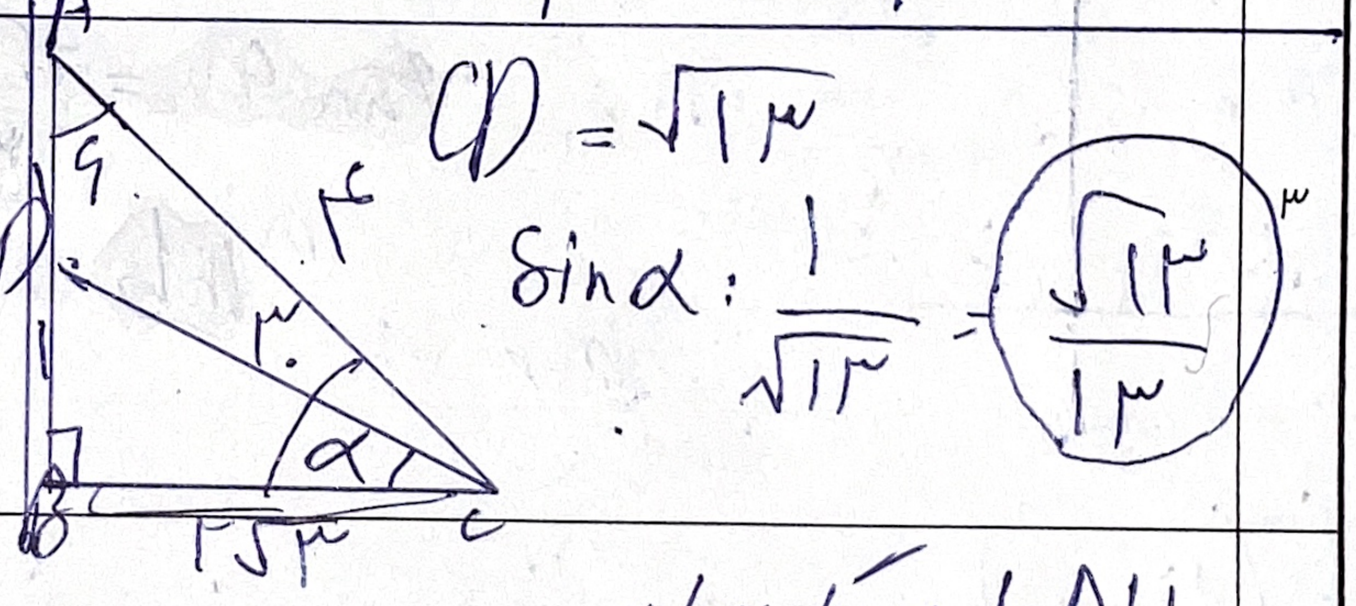
۳)



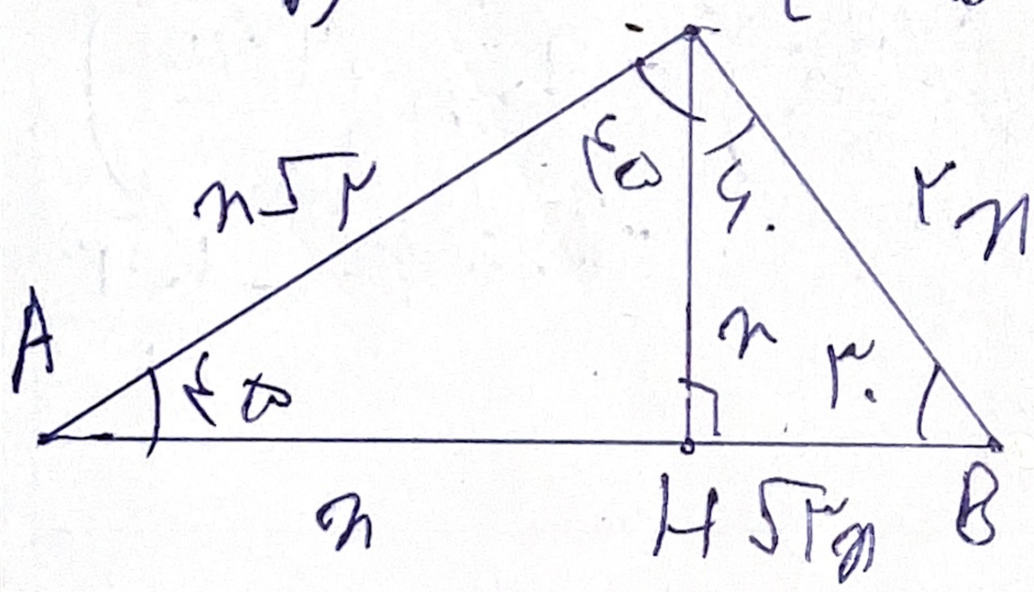


۴)



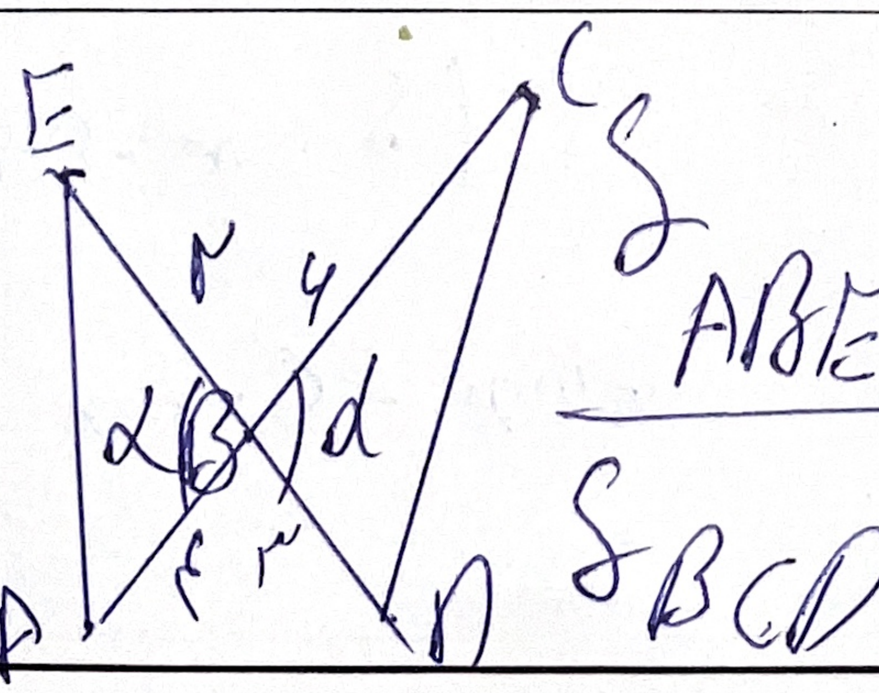


۵)

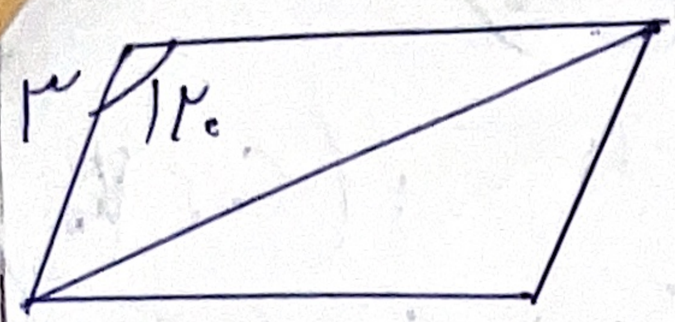


$\frac{AB}{AC} = \frac{2(1+\sqrt{3})}{2(\sqrt{2})} = \frac{1+\sqrt{3}}{\sqrt{2}}$ ارتفاع وارد بر وتر AH

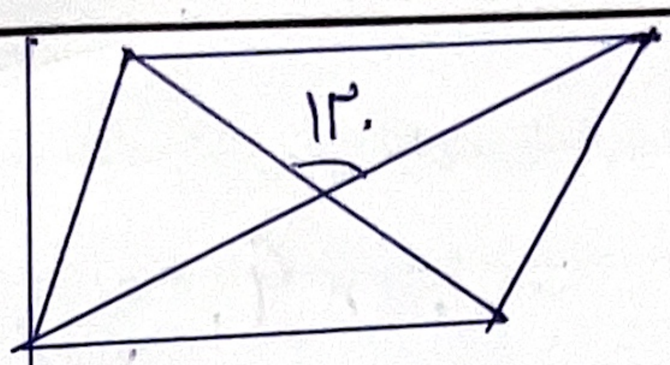
۶)



$\frac{S_{ABE}}{S_{BCD}} = \frac{\frac{1}{2}\times 2\times 4\times \sin\alpha}{\frac{1}{2}\times 3\times 4\times \sin\alpha} = \frac{1}{18} = \frac{6}{9}$

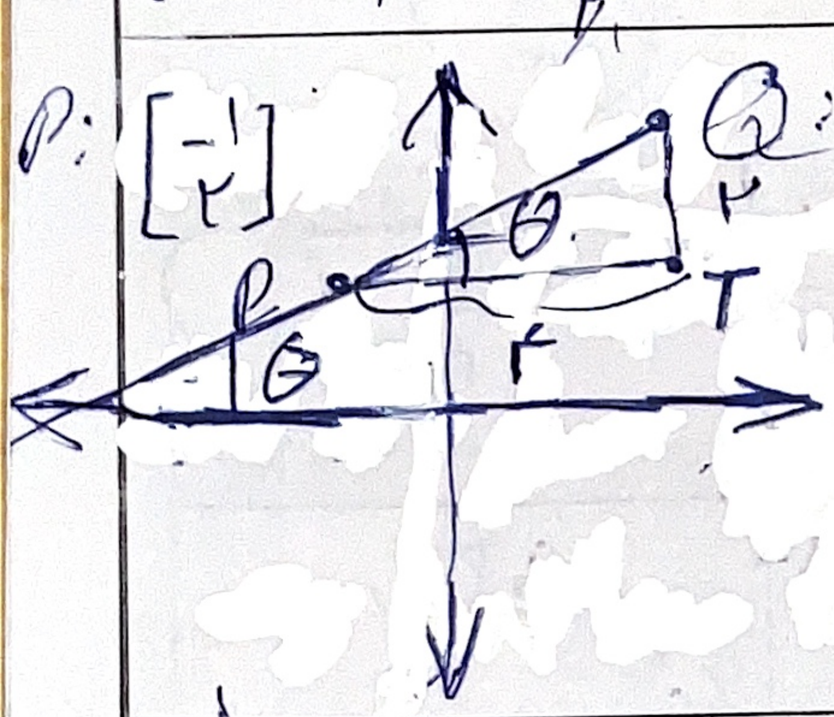


$$۴ \times \left(۱۲ \times ۴^{۲} \times \frac{۱}{۲} \times \frac{\sqrt{۳}}{۲} \right) = ۹\sqrt{۳}$$



$$۳ \times ۴ \times \frac{۱}{۲} \times \frac{\sqrt{۳}}{۲} = ۳\sqrt{۳}$$

۶



$$QT = ۲ - ۲ = ۰$$

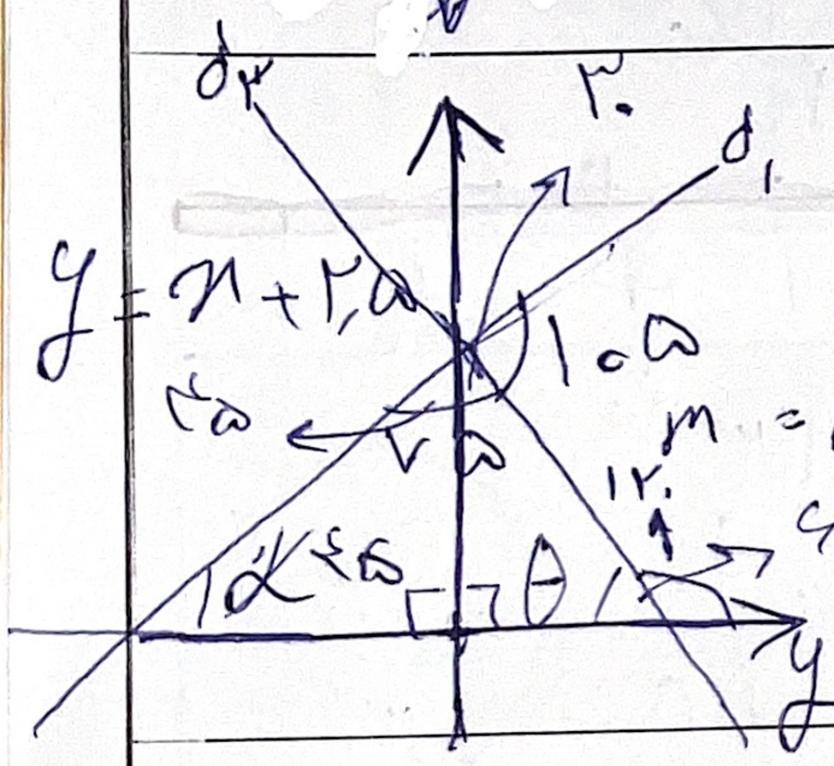
$$TP = ۳ - (-۱) = ۴$$

$$PQ^{۲} = QT^{۲} + TP^{۲} = ۱۶ + ۴ = ۲۰$$

$$\Rightarrow PQ = ۲\sqrt{۵}$$

$$\Rightarrow \cos\theta = \frac{۴}{۲\sqrt{۵}} = \frac{۸\sqrt{۵}}{۲۰} = \frac{۲\sqrt{۵}}{۵}$$

۲



$b = ۲,۵$

$m_{d_۱} = ۱ \Rightarrow \tan\alpha = ۱ \Rightarrow \alpha = ۴۵^\circ \Rightarrow \theta = ۶۰^\circ$

$m = m_{d_۲} = \tan ۱۲۰^\circ = -\sqrt{۳}$

$mb = -\sqrt{۳} \times \frac{۵}{۲} = \frac{-۵\sqrt{۳}}{۲}$

۸

می‌دانیم تو تابع داریم ----------

$$f\left(\frac{۵\pi}{۶}\right) = \cos\left(\frac{۱۱\pi}{۶}\right) + \sin\left(-\frac{۴\pi}{۶}\right) - \tan\left(\frac{۱۴\pi}{۶}\right)$$

$$= \frac{۱ - \sqrt{۳} - ۲\sqrt{۳}}{۲} = \frac{۱}{۲}\left(۱ - ۳\sqrt{۳}\right) - \sin\frac{۴\pi}{۳} - \tan\frac{۱۴\pi}{۶}$$

$$= \frac{۱ - ۳\sqrt{۳}}{۲} = \frac{\sqrt{۳}}{۲} - ۲\sqrt{۳} = \frac{-۳\sqrt{۳}}{۲}$$

۹

$$\frac{\sin\left(\frac{\pi}{۲} + x\right) + \cos\left(\frac{۳\pi}{۲} - x\right)}{\cos(\pi + x) - \sin(-x)} = \frac{-۱(\sin x - \cos x)}{\sin x - \cos x}$$

$$= -۱$$

۱۰