

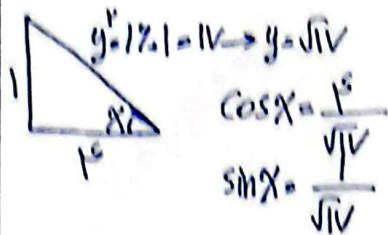
نام و نام خانوادگی: پاسخنامه تشریحی تکالیف شماره ۱۱، کلاس:
 نام و نام خانوادگی: پاسخنامه تشریحی تکالیف شماره ۱۱، کلاس:

$$۱) \tan 135^\circ + \sin 225^\circ + \cos 225^\circ = -1 - \frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2} = -1 - \sqrt{2}$$

$$۲) \tan 135^\circ + \sin 225^\circ + \cos 135^\circ = -\frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2} + \frac{1}{2} = \frac{-\sqrt{2} - \sqrt{2} + 1}{2} = \frac{-2\sqrt{2} + 1}{2}$$

$$\text{الف} - \tan \frac{\pi}{4} + (-\sin \frac{\pi}{4})(-\cos \frac{\pi}{4}) = -1(-\frac{\sqrt{2}}{2})^2 = -\frac{1}{2}$$

$$\text{ب} (-\tan \frac{\pi}{4})(-\sin \frac{\pi}{4}) + (-\cos \frac{\pi}{4}) = (-\frac{\sqrt{2}}{2})(-\frac{\sqrt{2}}{2}) + (-\frac{1}{2}) = 0$$



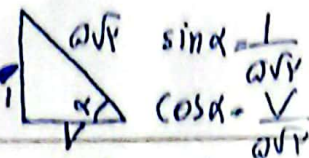
$$\frac{3\cos \alpha - \sin \alpha}{\cos \alpha + \sin \alpha} = \frac{\frac{3}{\sqrt{2}} - \frac{1}{\sqrt{2}}}{\frac{3}{\sqrt{2}} + \frac{1}{\sqrt{2}}} = \frac{\frac{2}{\sqrt{2}}}{\frac{4}{\sqrt{2}}} = \frac{1}{2}$$

$$\sin^2 \alpha + \cos^2 \alpha = 1 \rightarrow 9\cos^2 \alpha + \cos^2 \alpha = 1 \rightarrow 10\cos^2 \alpha = 1 \rightarrow \cos \alpha = -\frac{1}{\sqrt{10}}$$

$$\text{الف} \cos \alpha \rightarrow \cos^2 \alpha = 1 - \sin^2 \alpha \Rightarrow 1 - \frac{9}{100} = \frac{91}{100} \rightarrow \cos \alpha = -\frac{\sqrt{91}}{10}$$

$$\cos(135^\circ + \alpha) = \cos 135^\circ \cos \alpha - \sin 135^\circ \sin \alpha = -\frac{\sqrt{2}}{2} \times -\frac{\sqrt{91}}{10} - (\frac{\sqrt{2}}{2} \times \frac{3}{10}) = \frac{\sqrt{182}}{20} - \frac{3\sqrt{2}}{20} = \frac{\sqrt{182} - 3\sqrt{2}}{20}$$

ب)



$$\sin(225^\circ + \alpha) = \sin 225^\circ \cos \alpha + \sin \alpha \cos 225^\circ$$

$$= -\frac{\sqrt{2}}{2} \times \frac{1}{\sqrt{2}} + \frac{\sqrt{2}}{2} \times \frac{1}{\sqrt{2}} = -\frac{1}{2} + \frac{1}{2} = 0$$

$$9\sin^2 \alpha + \cos^2 \alpha = \frac{1}{5}$$

$$- \sin^2 \alpha - \cos^2 \alpha = -1$$

$$\sin^2 \alpha = \frac{1}{10}$$

$$\cos^2 \alpha = \frac{9}{10}$$

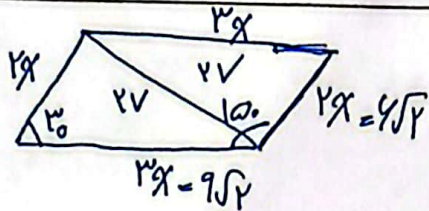
$$\tan^2 \alpha = \frac{\sin^2 \alpha}{\cos^2 \alpha} = \frac{\frac{1}{10}}{\frac{9}{10}} = \frac{1}{9}$$

$$S_{\text{triangle}} = \frac{1}{2} ab \sin \alpha \rightarrow \frac{1}{2} \times 4 \times \sqrt{3} \times \sin \alpha = \frac{1}{2} \rightarrow \sin \alpha = \frac{1}{4\sqrt{3}} = \frac{\sqrt{3}}{12} \rightarrow \alpha \approx 1.1^\circ$$

$$120^\circ - \alpha = \alpha$$

$$\frac{120}{4} = 30$$

1, 1, 1



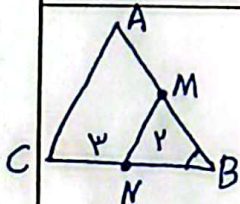
$$4 \times 4 = \frac{1}{2} \times \frac{1}{2} \times 4 \times 4 \rightarrow 4 = 1 \rightarrow 4 = 4\sqrt{3}$$

$$P = 4(4\sqrt{3} + 4\sqrt{3}) = 32\sqrt{3}$$

$$\left. \begin{aligned} S_{ABC} &= \frac{1}{2} \times 4 \times 4 \times \sin A = 16 \sin A \\ S_{ADE} &= \frac{1}{2} \times 4 \times 4 \times \sin A = 16 \sin A \end{aligned} \right\} \begin{aligned} 16 \sin A &= 16 \sin A = 16 \sin A = 16 \sin A \rightarrow \sin A = \frac{1}{2} \\ \rightarrow A &= 30^\circ \end{aligned}$$

$$\tan 30^\circ = \frac{\sqrt{3}}{3}$$

1



$$\frac{S_{ABC}}{S_{BMN}} = \frac{\frac{1}{2} \times AB \times \sin B \times BC}{\frac{1}{2} \times BM \times \sin B \times BN} = 4 \rightarrow \omega(AB=AM+MB) = 4BM$$

$$\omega AM + \omega MB = 4BM \rightarrow \omega AM = 3BM$$

$$\frac{S_{ABC}}{S_{BMN}} = \frac{\frac{1}{2} \times AB \times \sin B \times BC}{\frac{1}{2} \times BM \times \sin B \times BN} = \frac{AB \times BC}{BM \times BN} = 4$$

$$\frac{BM}{AB} = \frac{1}{4} \rightarrow \frac{BM}{BM+AM} = \frac{1}{4} \rightarrow \frac{BM}{AM} = \frac{1}{3}$$

$$\frac{1}{|\cos \alpha|} - \frac{\sin \alpha}{\cos \alpha} = \frac{1 + \sin \alpha}{|\cos \alpha|} \begin{cases} \cos \alpha > 0 \rightarrow \frac{1 + \sin \alpha}{\cos \alpha} \\ \cos \alpha < 0 \rightarrow \frac{-1 - \sin \alpha}{\cos \alpha} = \frac{-1 - \sin \alpha}{\cos \alpha} \end{cases}$$

$$\frac{|\sin \alpha|}{\cos \alpha} = \frac{-\sin \alpha}{\cos \alpha} \rightarrow \sin \alpha < 0 \rightarrow \text{ناقصه ۳ و ۲}$$

ناقصه ۳ است