

۲۰

اسماء صغریٰ

Subject:

Year:

Month:

Day:

$$\left(\frac{\sqrt{2}}{2} - \frac{\sqrt{3}}{2}\right) \left(\frac{\sqrt{2}}{2} + \frac{\sqrt{3}}{2}\right) = \frac{2-3}{4} = \boxed{-\frac{1}{4}}$$

(الف) (۱)

$$\frac{1 + 3\left(\frac{2}{9}\right)}{3\left(\frac{2}{9}\right) + 3\left(\frac{2}{9}\right)} = \frac{1+1}{3+1} = \frac{2}{4} = \boxed{\frac{1}{2}}$$

(ب)

$$\sin 45^\circ = \frac{\sqrt{2}}{2} = \frac{AH}{\sqrt{6}} \rightarrow AH = \frac{2\sqrt{3}}{2} = \sqrt{3} \xrightarrow{\text{فیباقوس}} (\sqrt{2})^2 = (\sqrt{3})^2 + (HC)^2 \quad (الف) (۲)$$

$$\boxed{HC = 1}$$

$$\cos 30^\circ = \frac{\sqrt{3}}{2} = \frac{9}{AC} \rightarrow AC = \frac{18}{\sqrt{3}} = 6\sqrt{3} \xrightarrow{\text{فیباقوس}} AH = 3\sqrt{3} \quad (ب)$$

$$\triangle ABH \text{ فیباغوس} \rightarrow BH = 3\sqrt{3} \quad (\because AH = BH \text{ وجہ}) \rightarrow \hat{A} = \hat{B} = 45^\circ$$

$$\tan 50^\circ = \frac{\sqrt{2}}{1} = \frac{80\sqrt{2}}{BD} \rightarrow BD = 80$$

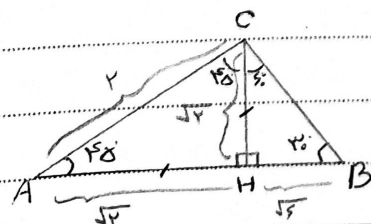
$$\tan 40^\circ = \frac{\sqrt{2}}{2} = \frac{80\sqrt{2}}{BC} \rightarrow BC = 160$$

$$\left. \begin{array}{l} BD = 80 \\ BC = 160 \end{array} \right\} BC - BD = 80 \rightarrow 160 - 80 = \boxed{80} \quad (الف) (۳)$$

$$\tan 50^\circ = \frac{\sqrt{2}}{1} = \frac{BC}{2} \rightarrow BC = 2\sqrt{2}$$

$\triangle BDC$ فیباغوس

$$\sin \alpha = \frac{1}{\sqrt{13}} = \frac{\sqrt{13}}{13} \leftarrow DC = \sqrt{13}$$



$$\sin 45^\circ = \frac{\sqrt{2}}{2} = \frac{AH}{AC} \rightarrow \begin{cases} AH = \sqrt{2} = CH \\ AC = 2 \end{cases}$$

$$\tan 30^\circ = \frac{\sqrt{3}}{3} = \frac{BH}{\sqrt{2}} \rightarrow BH = \frac{3\sqrt{2}}{3} = \sqrt{2}$$

$$\frac{AB}{AC} = \frac{\sqrt{2} + \sqrt{2}}{2} = \boxed{1} \quad (۴)$$

$$\frac{\sqrt{2}(1+\sqrt{3})}{\sqrt{2} \times \sqrt{2}} = \boxed{\frac{1+\sqrt{3}}{2}}$$

$$\frac{S_{\triangle ABE}}{S_{\triangle BCD}} = \frac{\frac{1}{2} \times 2 \times 2 \times \sin \alpha}{\frac{1}{2} \times 2 \times 2 \times \sin \alpha} = \frac{1}{1} = \boxed{1}$$

۱) $B_1 = B_2$ (مساوی) $C_1 = C_2$ (مساوی) α (مساوی) α (مساوی)

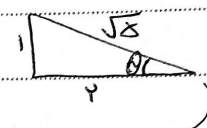
(۵)

تبدیل مختصات قطبی

$$S = \frac{1}{2} \times r \times r \times \sin(110^\circ) \times \left(\frac{\sqrt{3}}{r}\right) \times r = \boxed{6\sqrt{3}} \quad (6)$$

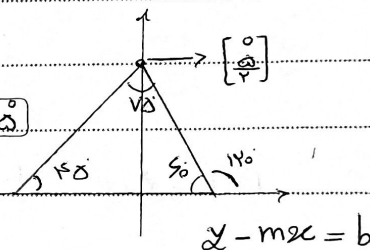
$$S = \frac{1}{2} \times r \times r \times \sin(110^\circ) \times \left(\frac{\sqrt{3}}{r}\right) = \boxed{3\sqrt{3}} \quad (7)$$

$$\text{شیب} = \tan \theta = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - 2}{3 + 1} = \frac{2}{4} = \frac{1}{2} \rightarrow$$



$$\cos \theta = \frac{2}{\sqrt{5}} = \boxed{\frac{2\sqrt{5}}{5}} \quad (7)$$

$$2y - 2x = 5 \rightarrow \frac{-a}{b} = +1 = \tan \theta \Rightarrow \theta = 45^\circ$$



$$b = \frac{5}{2} - 0 \Rightarrow \boxed{b = \frac{5}{2}}$$

$$m \times b = \frac{a}{r} \times \sqrt{3} = \boxed{\frac{5\sqrt{3}}{2}}$$

$$\tan 110^\circ = \frac{\sqrt{3}}{1} = -\left(\frac{-m}{1}\right) \Rightarrow m = \sqrt{3}$$

$$\cos\left(\pi + \frac{5\pi}{5}\right) + \sin\left(\frac{\pi}{2} - \frac{5\pi}{5}\right) - \tan\left(\frac{3\pi}{2} + \frac{5\pi}{5}\right) =$$

$$\frac{11\pi}{5} = 396^\circ$$

$$\frac{-\pi}{5} = -36^\circ$$

$$\frac{11\pi}{5} = 396^\circ$$

$$\left(\frac{\sqrt{3}}{2}\right) + \left(-\frac{\sqrt{3}}{2}\right) - \left(-\frac{\sqrt{3}}{2}\right) = \boxed{\frac{\sqrt{3}}{2}} \quad (9)$$

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

$$\text{ضرایب } \frac{\pi}{4} \text{ Sin و Cos و برکلی تبدیل می شود} \quad (10)$$