

نام و نام خانوادگی پارسا دهش پاسخنامه تشریحی تکلیف شماره ۲۵. کلاس دبیرستان

$$\text{ا) } \left(\frac{\sqrt{2}}{2} + \frac{-\sqrt{2}}{2} \right) \left(\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} \right) = \frac{2}{2} - \frac{2}{2} = \frac{-1}{2}$$

$$\text{ب) } \frac{1 + 3 \times \left(\frac{1}{\sqrt{3}} \right)^2}{2 \left(\frac{1+\sqrt{3}}{2} \right)^2 + 2 \left(\frac{-1-\sqrt{3}}{2} \right)^2} = \frac{2}{2 \times \frac{4}{3} + 2 \times \frac{4}{3}} = \frac{2}{\frac{8}{3} + \frac{8}{3}} = \frac{2}{\frac{16}{3}} = \frac{2}{16} \times 3 = \frac{3}{8}$$

$$\text{ا) } \sin 45^\circ = \frac{AH}{BA} = \frac{AH}{\sqrt{2}} = \frac{\sqrt{2}}{2} \rightarrow AH = \frac{\sqrt{2}}{2} \times \sqrt{2} = 1 \quad HC = \sqrt{AC^2 - AH^2} = \sqrt{1^2 - 1^2} = 0$$

منه و لایه من باشد.

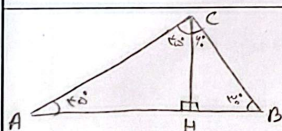
$$\text{ب) } \tan 30^\circ = \frac{1}{\sqrt{3}} = \frac{AH}{HC} \rightarrow AH = \frac{1}{\sqrt{3}} \times \frac{\sqrt{3}}{2} = \frac{1}{2} \quad \sin 60^\circ = \frac{AH}{BA} = \frac{\frac{1}{2}}{\sqrt{2}} = \frac{1}{2\sqrt{2}} = \frac{\sqrt{2}}{4}$$

و لایه من باشد.

$$\text{ا) } \tan 45^\circ = \frac{1}{1} = \frac{AB}{BD} \Rightarrow BD = \frac{AB}{1} = \frac{5\sqrt{2}}{\sqrt{2}} = 5 \quad \tan 30^\circ = \frac{1}{\sqrt{3}} = \frac{AB}{BC} = \frac{AB}{BD + AD} \rightarrow 150 = 51 + n \rightarrow n = 100$$

$$\text{ب) } \tan 45^\circ = \sqrt{3} = \frac{BC}{AB} \rightarrow BC = \sqrt{3} \times AB = \sqrt{3} \times 1 = \sqrt{3} \quad DC = \sqrt{BD^2 + BC^2} = \sqrt{1 + 12} = \sqrt{13}$$

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



$$CH = \sqrt{2}m$$

$$AC = 2m$$

$$AH = \sqrt{2}m \quad \left. \begin{array}{l} AH + HB = AB = (\sqrt{2} + \sqrt{3})m \\ HB = \sqrt{3}m \end{array} \right\}$$

$$HB = \sqrt{3}m$$

$$\sin 45^\circ = \frac{\sqrt{2}}{2} = \frac{CH}{AC} \rightarrow CH = \sqrt{2}m$$

$$\tan 30^\circ = \frac{1}{\sqrt{3}} = \frac{CH}{HB} \rightarrow HB = \sqrt{3}m$$

$$\cos 45^\circ = \frac{\sqrt{2}}{2} = \frac{AH}{AC} \rightarrow AH = \sqrt{2}m$$

$$\frac{AB}{AC} = \frac{(\sqrt{2} + \sqrt{3})m}{2m} = \frac{\sqrt{2} + \sqrt{3}}{2}$$

$$\frac{S_{ABE}}{S_{ACD}} = \frac{\frac{1}{2} \times \sin 60^\circ \times 2 \times 2}{\frac{1}{2} \times \sin 60^\circ \times 2 \times 2} = \frac{1}{1} = \frac{1}{1}$$

$$\text{ا)} S = \sin 10^\circ \times r \times r = \frac{\sqrt{5}}{r} \times r \times r = r\sqrt{5}$$

$$\text{ب)} S = \frac{1}{r} \times r \times r \times \sin\left(\frac{10^\circ}{\frac{r}{\sqrt{5}}}\right) = \frac{1}{r} \times r \times r \times \frac{\sqrt{5}}{r} = r\sqrt{5}$$

$$y = ax + b \begin{cases} P \rightarrow r = +a \cdot b \\ Q \rightarrow r = r_a + b \\ r = r_a \rightarrow a = \frac{1}{r} \end{cases} \quad a = \tan \theta = \frac{1}{r}$$

$$\tan \theta = \frac{\sin \theta}{\cos \theta} = \frac{1}{r} \rightarrow r \sin \theta = \cos \theta$$

$$\sin^2 \theta + \cos^2 \theta = 1 \rightarrow \sin^2 \theta + r^2 \sin^2 \theta = 1 \rightarrow \Delta \sin^2 \theta = 1 \rightarrow \sin^2 \theta = \frac{1}{\Delta}$$

$$\Rightarrow \cos \theta = \frac{r}{\sqrt{\Delta}} = \frac{r\sqrt{5}}{5}$$

$$\cos^2 \theta = \frac{r^2}{\Delta} \rightarrow \cos \theta = \frac{r}{\sqrt{\Delta}} \left\{ \begin{array}{l} \frac{r}{\sqrt{5}} \times \\ \frac{r}{\sqrt{5}} \cdot \end{array} \right\}$$

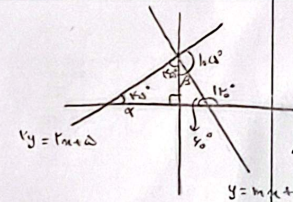
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$$y = rx + d \rightarrow y = x + r_d \rightarrow a = 1 \quad \tan \alpha = 1 \rightarrow \alpha = 45^\circ$$

$$10^\circ - (10^\circ + 45^\circ) = \beta = 45^\circ$$

$$m = \tan 10^\circ = -\sqrt{5} \quad b = \frac{d}{r}$$

$$mb = \frac{-d\sqrt{5}}{r}$$



$$f(x) = \underbrace{\cos(10^\circ + x)}_{-\cos x} + \underbrace{\sin\left(\frac{\pi}{4} - x\right)}_{+\cos x} - \underbrace{\tan\left(\frac{\pi}{4} + x\right)}_{-\cot x}$$

$$\frac{\Delta \pi}{4} = 10^\circ$$

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

$$f\left(\frac{\Delta \pi}{r}\right) = \cot \frac{\Delta \pi}{r} = \cot 10^\circ = -\sqrt{5}$$

$$\frac{\sin\left(\frac{10^\circ}{r} \pi + x\right) + \cos\left(\frac{10^\circ}{r} \pi - x\right)}{\cos\left(\frac{10^\circ}{r} \pi + x\right) - \sin\left(\frac{10^\circ}{r} \pi - x\right)} = \frac{\cos x + (-\sin x)}{-\cos x + (-\sin x)} = \frac{\cos x - \sin x}{-(\cos x + \sin x)} = -1$$