

نام و نام خانوادگی: (تذکره: این سوال را بنویسید) پاسخنامه تشریحی تکلیف شماره ۵۲۰۰۰ کلاس: (۴۵) پنجم دبیرستان:

الف) $(\sin 15^\circ + \sin 30^\circ)(\cos 15^\circ - \cos 15^\circ) = \left(\frac{\sqrt{2}}{2} - \frac{\sqrt{3}}{2}\right)\left(\frac{\sqrt{2}}{2} + \frac{\sqrt{3}}{2}\right) = \frac{2}{4} - \frac{3}{4} = -\frac{1}{4}$

ب) $\frac{1 + \tan^2 110^\circ}{\cos^2 110^\circ + \cos^2 20^\circ} = \frac{1}{\frac{1}{4}} = \frac{1}{4}$

$\frac{\sin}{\cos} = \frac{1}{\frac{1}{4}} = \frac{1}{\frac{1}{4}} = \frac{1}{\frac{1}{4}} \cdot \frac{\sqrt{2}}{\sqrt{2}} \rightarrow \left(\frac{\sqrt{2}}{4}\right)^2 = \frac{2}{16} = \frac{1}{8} \rightarrow \frac{1}{8} \times 8 = 1$

$\left(\frac{\sqrt{3}}{4}\right)^2 = \frac{3}{16} \times 4 = 3$ $\frac{\sqrt{2}}{4} \times \frac{\sqrt{2}}{4} = \frac{2}{16} \times 4 = 1$

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الف) $\frac{\sqrt{2} \times \sqrt{2}}{4} = \frac{\sqrt{2}}{2} = \frac{2\sqrt{2}}{4} = \sqrt{2}$

$(2\sqrt{3})^2 - (\sqrt{3})^2 = 12 - 3 = 9 \rightarrow \sqrt{9} = 3 = HC$

ب) $\frac{a}{\sin A} = \frac{b}{\sin B} \rightarrow \frac{2\sqrt{2}}{\frac{1}{2}} = \frac{4\sqrt{3}}{\sin B} \rightarrow 4\sqrt{2} \sin B = 4\sqrt{3} \rightarrow \sin B = \frac{\sqrt{3}}{\sqrt{2}} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

$B = 45^\circ$

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

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الف) $2(50\sqrt{2} = \frac{\sqrt{2}}{2} \times 1)$

$100 = 2$

ب) $\sin \alpha = \frac{CD}{BC} = \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

$14 - 4 = 10 \rightarrow \sqrt{2}$

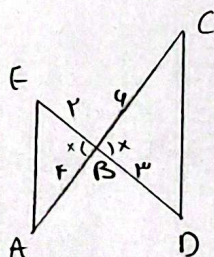
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الف) $\frac{\sqrt{2} \times \sqrt{2}}{\sqrt{2} \times 1} = \sqrt{2}$

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

$\frac{AB}{AC} = \frac{2 + \sqrt{2} \times 1}{\sqrt{2} \times 1} = \frac{2(1 + \sqrt{2})}{\sqrt{2} \times 1} = \frac{1 + \sqrt{2}}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2} + \sqrt{4}}{2}$

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$\frac{S_{ABE}}{S_{BCD}} = \frac{\frac{1}{2} \times 2 \times 4 \times \sin \beta}{\frac{1}{2} \times 4 \times 2 \times \sin \beta} = \frac{1}{1} = \frac{1}{1}$

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$$S_{\text{ش}} = \frac{1}{r} \times r \times F \times \sin 120^\circ = 4 \times \frac{\sqrt{10}}{r} = 4\sqrt{10} \rightarrow S_{\text{ش}} = 4\sqrt{10} \times 2 = 8\sqrt{10}$$

(الف)

$$\frac{1}{r} \times r \times F \times \sin \frac{\sqrt{r}}{r} = 4\sqrt{10}$$

(ب)

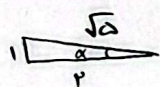
$$y = ax + b$$

$$F = ra + b \rightarrow (ra + b - F = 0) \rightarrow -ra - b + F = 0$$

$$r = -a + b \rightarrow -a + b - r = 0 \rightarrow \frac{-a + b - r = 0}{-ra + r = 0} \rightarrow -ra = -r \rightarrow a = \frac{1}{r}, b = \frac{a}{r}$$

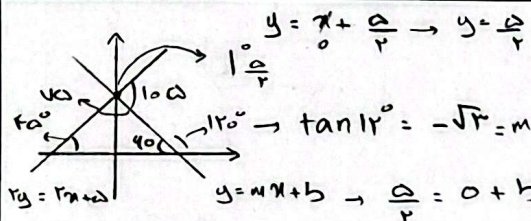
$$y = \frac{1}{r}x + b$$

$$\tan \theta = \frac{1}{r} = \frac{\text{opp}}{\text{adj}}$$



$$\cos = \frac{\text{adj}}{\text{hyp}} = \frac{r}{\sqrt{r^2 + 1}} = \frac{r\sqrt{a}}{\omega}$$

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$$y = x + \frac{a}{r}$$

$$\tan \alpha = 1 \rightarrow \alpha = 45^\circ$$

$$\Rightarrow mb = -\sqrt{r} \times \frac{a}{r} = -\frac{a\sqrt{r}}{r}$$

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$$f(x) = \cos(\bar{a} + x) + \sin(\frac{\bar{a}}{r} - x) - \tan(\frac{r\bar{a}}{r} + x)$$

$$f(\frac{a\bar{a}}{r}) = \cos(\bar{a} + \frac{a\bar{a}}{r}) + \sin(\frac{\bar{a}}{r} - \frac{a\bar{a}}{r}) - \tan(r\frac{\bar{a}}{r} + \frac{a\bar{a}}{r})$$

$$-\cos x + \cos x + \cot x$$

$$\frac{\sqrt{r}}{r} - \frac{\sqrt{r}}{r} - \sqrt{r} = -\sqrt{r}$$

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$$\sin(\frac{10\bar{a}}{r} + x) + \cos(\frac{10\bar{a}}{r} - x)$$

$$\cos(r\bar{a} + x) - \sin(4\bar{a} - x)$$

$$(\frac{14\bar{a}}{r} + \frac{\bar{a}}{r} + x) = \sin(\frac{\bar{a}}{r} + x) = \cos x$$

$$(\frac{12\bar{a}}{r} + \frac{r\bar{a}}{r} - x) = \cos(\frac{r\bar{a}}{r} - x) = -\sin x$$

$$r\bar{a} + x = r\bar{a} + \bar{a} + x = \cos(\bar{a} + x) = -\cos x$$

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

$$4\bar{a} - x = \sin(r\bar{a} - x) = -\sin x$$

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