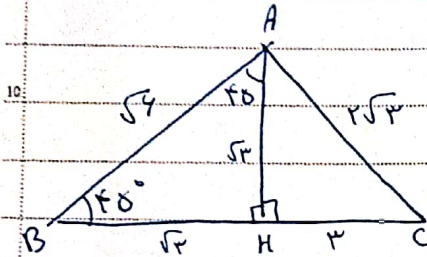


$$\frac{\sqrt{r}}{r} - \frac{\sqrt{r}}{r} = \frac{\sqrt{r}}{r} - \frac{\sqrt{r}}{r}$$

$$(\sin 135^\circ + \sin 135^\circ)(\cos 135^\circ - \cos 135^\circ) = \left(\frac{\sqrt{r} + \sqrt{r}}{r}\right)\left(\frac{\sqrt{r} + \sqrt{r}}{r}\right) = \frac{1}{r}$$

$$\frac{1 + \sqrt{r} \tan 135^\circ}{r \cos 135^\circ + r \cos 135^\circ} = \frac{r}{r} = \frac{1}{r}$$

$$r \times \frac{1}{r} = r + r \times \frac{1}{r} = r$$

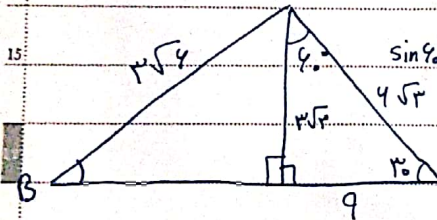


$$(\sqrt{r})^2 + r^2 = (r\sqrt{r})^2$$

$$r + r^2 = 1r$$

$$9 \Rightarrow r = 3 \Rightarrow HC$$

S = HC 2



$$\sin 45^\circ = \frac{r}{r} \Rightarrow \frac{r}{r} \times r = r$$

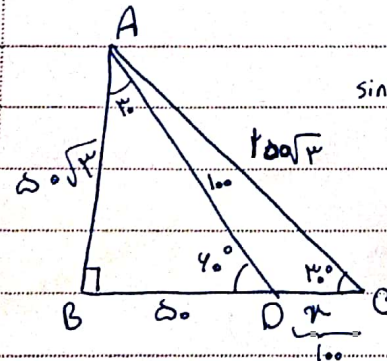
$$r = 4\sqrt{r}$$

$$\Rightarrow (4\sqrt{r})^2 = 1 + r$$

$$\sin B = \frac{r\sqrt{r}}{r\sqrt{2}} \times \frac{1}{r} \times \frac{r}{r} = \frac{1}{2}$$

45 = B 2

5



$$\sin 45^\circ = \frac{r}{r} \Rightarrow \frac{r}{r} \times r = 5\sqrt{r}$$

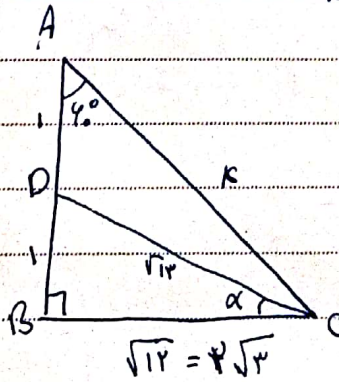
$$\sin 45^\circ = \frac{1}{r} \Rightarrow \frac{1}{r} \times r = 5\sqrt{r}$$

$$\sin 45^\circ = \frac{r}{r} \times 10\sqrt{r} = 10$$

r = a 3

5

sin alpha = ?



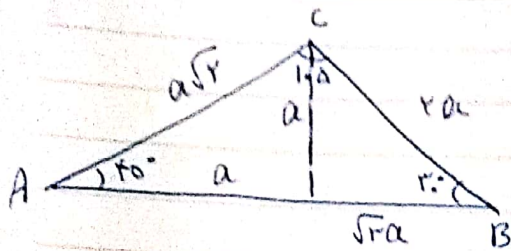
$$\cos 30^\circ = \frac{AC}{r}$$

$$(r)^2 + (1)^2 = 1r$$

$$DC = 1 + 1r = 1r \Rightarrow DC = \sqrt{1r}$$

$$\sin \alpha = \frac{1}{\sqrt{1r}} = \frac{\sqrt{1r}}{1r}$$

Arman

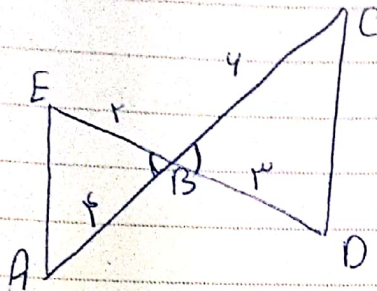


$$B = \frac{(1.0 + 4.5)}{10.} = 11.5^\circ$$

سوال 4: $P = \frac{AB}{AC}$

$$\Rightarrow \frac{a(1+\sqrt{2})}{a\sqrt{2}} = \frac{1+\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2} + \sqrt{2} + 1}{\sqrt{2}} = \frac{\sqrt{2} + 1}{\sqrt{2}}$$

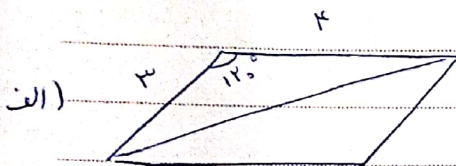
سوال 5: در مثل قائم الزاویه ABC، AB=3، BC=4، AC=5، مساحت مثل ABC را بیابید.



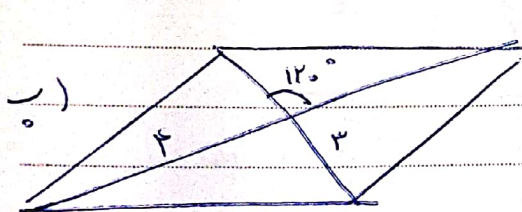
$$S = \frac{1}{2} ab \sin \alpha$$

$$\frac{S_{ABE}}{S_{BCD}} = \frac{\frac{1}{2} \times 3 \times 4 \times \sin B}{\frac{1}{2} \times 3 \times 4 \times \sin B} = \frac{1}{1} = 1$$

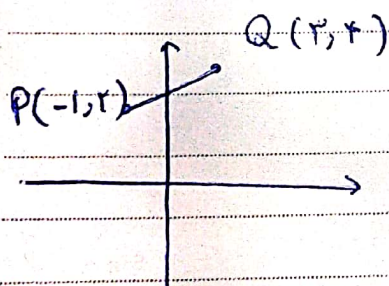
سوال 6: مساحت متوازی الاضلاع



$$S = ab \sin \alpha \Rightarrow 3 \times 4 \times \sin 45^\circ = 4\sqrt{2}$$



$$S = ab \sin \alpha = 3 \times 4 \times \sin 45^\circ = 4\sqrt{2}$$



$$(y - y_1) = m(x - x_1)$$

$$2 - 4 = m(3 - (-1))$$

$$m = -\frac{1}{2}$$

$$\frac{1}{\cos \alpha} = \tan \alpha \Rightarrow 1 + \tan^2 \alpha = \frac{1}{\cos^2 \alpha}$$

$$1 + \frac{1}{\tan^2 \alpha} = \frac{1}{\cos^2 \alpha}$$

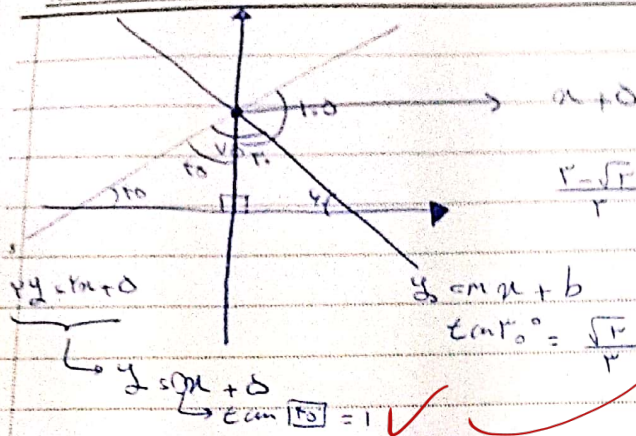
$$\cos \alpha = \frac{2}{5} \Rightarrow \cos^2 \alpha = \frac{4}{25}$$

$$\frac{2\sqrt{5}}{5}$$

سوال 7: مساحت مثل

سوال 8: مساحت مثل

Arman



$$a + 0 = \frac{\sqrt{r}}{r} x + b$$

$$\frac{r - \sqrt{r}}{r} x = \omega + b$$

$$y = mx + b$$

$$m = \tan(\theta) = \frac{y}{r}$$

$$\frac{\omega}{r} = -\sqrt{r}(\theta) + b \quad b = \frac{\omega}{r}$$

$$mb = -\omega \sqrt{r}$$

$$-\cos n$$

$$\sin n$$

$$-\tan n$$

$$\cos\left(\frac{\omega}{r} + n\right) + \sin\left(\frac{\omega}{r} - n\right) - \tan\left(\frac{\omega}{r} + n\right)$$

$$= -\cos n + \sin n + \tan n = f(n)$$

$$\frac{\omega}{r} = \frac{\omega}{r} + \frac{\omega}{r}$$



$$f(x) = -\cos x + \cos x + \omega \tan x$$

$$f(x) = \omega \tan x$$

$$f\left(\frac{\omega \pi}{a}\right) = -\sqrt{r}$$



$$\frac{14}{r} \frac{\omega}{r} + \frac{\omega}{r} + n$$

$$\frac{14}{r} \frac{\omega}{r} + \frac{\omega}{r} - n$$



$$\sin\left(\frac{14}{r} \frac{\omega}{r} + n\right) + \cos\left(\frac{14}{r} \frac{\omega}{r} - n\right)$$

$$-\cos n - \sin n$$

$$= -1$$

$$\cos\left(\frac{14}{r} \frac{\omega}{r} + n\right) - \sin\left(\frac{14}{r} \frac{\omega}{r} - n\right)$$

$$\cos n + \sin n$$



$$\cos x$$

$$-\cos x$$

$$-\sin x$$

$$\cos x - \sin x = -1$$

$$-\cos x + \sin x$$