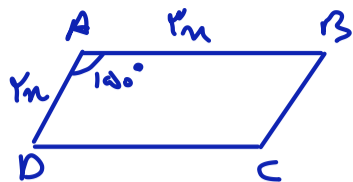


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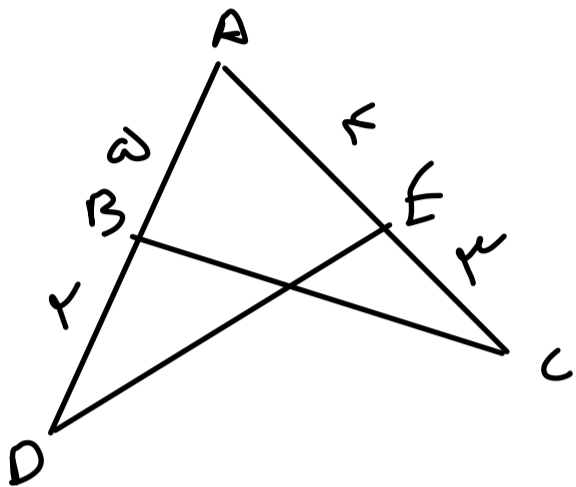


$$S_{ABCD} = r_n \times r_n \times \sin 100 = r_n^2 = a^2 \rightarrow r_n^2 = a^2 \rightarrow r_n = \sqrt{a}$$

$$b = a \rightarrow \boxed{a\sqrt{11}}$$

1

9



$$|S_{ABC} - S_{ADE}| = 1, \sqrt{a}$$

$$\frac{1}{2} \times \sqrt{a} \times \sin \hat{A} - \frac{1}{2} \times \sqrt{a} \times \sin \hat{A}$$

$$\frac{1}{2} \times \sqrt{a} \times \sin \hat{A} (a - r) = 1, \sqrt{a} \rightarrow \sin \hat{A} = \frac{1, \sqrt{a}}{r, a} = 0, a \rightarrow \hat{A} = 30^\circ \text{ or } 150^\circ$$

(حالت اول است)

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

2

9

$$\frac{1}{\sqrt{\cos^2 \alpha}} - \tan \alpha = \frac{1 + \sin \alpha}{|\cos \alpha|}$$

$$\frac{|\sin \alpha|}{\cos \alpha} = -\frac{1}{\cot \alpha}$$

$$\frac{1}{|\cos \alpha|} - \frac{\sin \alpha}{\cos \alpha} = \frac{1 + \sin \alpha}{|\cos \alpha|}$$

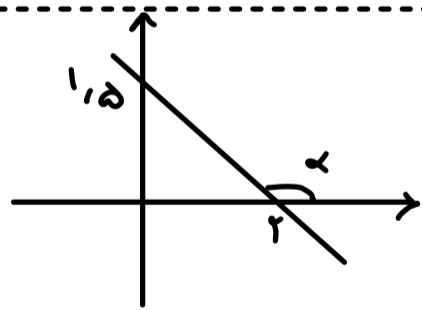
$$\frac{|\sin \alpha|}{\cos \alpha} = -\frac{\sin \alpha}{\cos \alpha} \Rightarrow \sin \alpha < 0 \rightarrow \text{موجب و منفی}$$

$$-\frac{\sin \alpha}{\cos \alpha} = \frac{1 + \sin \alpha - 1}{|\cos \alpha|} \rightarrow -\frac{\sin \alpha}{\cos \alpha} = \frac{\sin \alpha}{|\cos \alpha|} \Rightarrow \cos \alpha < 0 \rightarrow \text{موجب و منفی}$$

$$\Rightarrow \boxed{\frac{1}{\cos \alpha}}$$

3

9



$$\tan \alpha = \frac{-1/a}{r} = -0, \sqrt{a}$$

$$\tan(\frac{\pi}{2} - \alpha) = \cot \alpha = \boxed{-\frac{r}{r}}$$

4

9

$$\frac{r \cos 2\alpha - r \sin 2\alpha}{\sin 2\alpha - \cos 2\alpha} = \frac{r \cos(\frac{\pi}{2} - \alpha) - r \sin(\pi - \alpha)}{\sin(\pi + \alpha) - \cos(\frac{\pi}{2} + \alpha)} = \frac{-r \sin \alpha - r \sin \alpha}{-\sin \alpha - \sin \alpha} = \frac{-2r \sin \alpha}{-2 \sin \alpha} = \boxed{r, a}$$

5

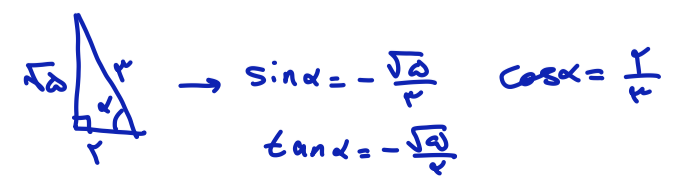
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$$\frac{\sin(\frac{\pi}{2} + \alpha) - \sin(\alpha - \pi)}{\cos \alpha} \rightarrow \frac{-\sin \alpha}{\cos \alpha + \sin \alpha} = \frac{a - r\sqrt{a}}{r}$$

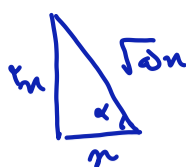
$$|\tan^2 \alpha - 1|$$

6

9



$$\sin \alpha = r \cos \alpha$$



$$\rightarrow \cos \alpha = -\frac{1}{\sqrt{2}} = -\frac{\sqrt{2}}{2}$$

5

7

$$r m x + (m^r - 1) y = r \rightarrow y = -\frac{r m}{m^r - 1} x - \frac{r}{r m}$$

$$\rightarrow -\frac{r m}{m^r - 1} = \tan \alpha \rightarrow -r m = \sqrt{r} m^r - \sqrt{r}$$

$$|\alpha \cdot \beta| = \frac{\sqrt{\Delta}}{|a|} \rightarrow \frac{\sqrt{14}}{\sqrt{r}} = \frac{r}{\sqrt{r}} = \frac{\sqrt{r}}{r}$$

1

5

$$\tan\left(\frac{\pi}{6} - u\right) = \frac{1 - m}{r + m}$$

$$-\frac{\pi}{6} < u < \frac{\pi}{6}$$

$$\frac{\pi}{6} > -u \geq \frac{\pi}{6} \rightarrow \frac{\pi}{6} > \frac{\pi}{6} - u > 0 \rightarrow 0 < \tan\left(\frac{\pi}{6} - u\right) < \infty$$

$$0 < \frac{1 - m}{r + m} \rightarrow \frac{-r}{-} \frac{1}{-} \rightarrow -r < m < 1$$

4

5

$$\tan 45^\circ \cos 45^\circ + \tan 45^\circ \sin 45^\circ = -\sqrt{r} \times -\frac{\sqrt{r}}{r} + -\sqrt{r} \times \frac{\sqrt{r}}{r} = 0$$

5

10