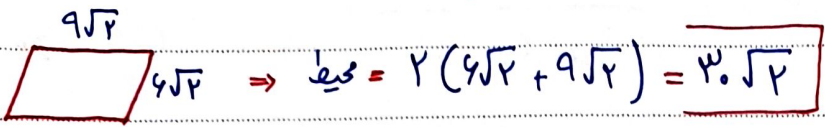


Subject: \_\_\_\_\_  
 Year: \_\_\_\_\_ Month: \_\_\_\_\_ Day: \_\_\_\_\_

1  $S = ab \sin \alpha = ۲k \times ۳k \times \sin ۱۵۰^\circ = ۳k^2 = ۹۶ \Rightarrow k = ۳\sqrt{۲}$  (۱)

2   $\Rightarrow$  مساحت =  $۲(۹\sqrt{۲} + ۹\sqrt{۲}) = ۳۰\sqrt{۲}$  (۲)

5  $S_{ADE} = \frac{1}{۲} \times ۴ \times ۷ \times \sin \hat{A}$  (۲)

6  $S_{ABC} = \frac{1}{۲} \times ۷ \times ۵ \times \sin \hat{A}$  (۳)


7  $\frac{۱۴}{۲} \sin \hat{A} = \frac{۱۷.۵}{۲} \sin \hat{A} \Rightarrow \sin \hat{A} = \frac{1}{۲}$  (۴)

8  $\sin^2 \hat{A} + \cos^2 \hat{A} = 1 \Rightarrow \frac{1}{۴} + \cos^2 \hat{A} = 1 \Rightarrow \cos \hat{A} = \frac{\sqrt{۳}}{۲} \Rightarrow \tan \hat{A} = \frac{\sqrt{۳}}{۳}$

10  $\frac{|\sin \alpha|}{|\cos \alpha|} = -\frac{\sin \alpha}{\cos \alpha} \Rightarrow \sin \alpha < 0$  نامیہ سوم یا چہارم (۳)

11  $\Rightarrow \alpha$  در نامیہ سوم

12  $\frac{1}{|\cos \alpha|} - \frac{\sin \alpha}{\cos \alpha} = \frac{1 + \sin \alpha}{|\cos \alpha|} \Rightarrow \cos \alpha < 0$  نامیہ دوم یا سوم (۴)

13 

15  $\tan \alpha = \frac{۱۵ - ۰}{۰ - ۲} = \frac{-۳}{۲} = -۱.۵$  (۱۴)

16  $\tan \alpha = \frac{-۴}{۳}$  (۵)

17  $\tan(\frac{\pi}{۲} - \alpha) = \cot \alpha$

19  $۱۵\alpha \rightarrow ۱۱. -۲۲$  (۱۵)

20  $۲۴\alpha \rightarrow ۲۷. -۲۲$

21  $۴۰\alpha \rightarrow ۱۱. +۲۲$

22  $۲۹\alpha \rightarrow ۲۷. +۲۲$

23 
$$\frac{۳ \cos(\frac{۳\pi}{۲} - ۲۲^\circ) - ۲ \sin(\pi - ۲۲^\circ)}{\sin(\pi + ۲۲^\circ) - \cos(\frac{۳\pi}{۲} + ۲۲^\circ)}$$
 (۶)

24 
$$\frac{-۳ \sin ۲۲^\circ - ۲ \sin ۲۲^\circ}{-\sin ۲۲^\circ - \sin ۲۲^\circ} = \frac{-۵ \sin ۲۲^\circ}{-۲ \sin ۲۲^\circ} = \frac{۵}{۲} = ۲.۵$$
 (۷)

# تذكرة

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$$\frac{\sin\left(\frac{p}{q} + \alpha\right) + \sin\left(\frac{p}{q} - \alpha\right)}{|\tan^2 \alpha - 1|} = \frac{\cos \alpha + \sin \alpha}{|\tan^2 \alpha - 1|}$$

$$\sin \alpha < \cos \alpha$$

$$\tan^2 \alpha = \frac{1}{\cos^2 \alpha} - 1 \Rightarrow \tan^2 \alpha = \frac{q}{p} - 1 = \frac{q-p}{p}$$

$$\sin^2 \alpha + \cos^2 \alpha = 1 \Rightarrow \frac{p}{q} + \sin^2 \alpha = 1 \Rightarrow \sin \alpha = -\sqrt{\frac{q-p}{p}}$$

$$e.g.: \frac{\frac{p}{q} + \frac{-\sqrt{q-p}}{p}}{\left|\frac{q-p}{p} - 1\right|} = \frac{\frac{p-\sqrt{q-p}}{p}}{\frac{1}{p}} = \frac{1-p\sqrt{q-p}}{p}$$

$$\sin^2 \alpha + \cos^2 \alpha = 1$$

$$p \cos^2 \alpha + p \sin^2 \alpha = 1 \Rightarrow \cos^2 \alpha = \frac{1-p}{p} \Rightarrow \cos \alpha = \frac{-1}{\sqrt{p}} = \frac{-\sqrt{p}}{p}$$

$$\sin \alpha < \cos \alpha$$

$$\text{سبب: } \tan \alpha = \sqrt{p} \Rightarrow y = \frac{p-ymx}{mx-1} \Rightarrow y = \frac{-ym}{mx-1} + \frac{p}{mx-1}$$

$$\frac{-ym}{mx-1} = \sqrt{p} \Rightarrow m^2 \sqrt{p} + ym - \sqrt{p} = 0 \xrightarrow{\times \sqrt{p}} pm^2 + y\sqrt{p} - p = 0$$

$$\Delta = 1p + p^2 = p^2 \Rightarrow m = \frac{-p\sqrt{p} \pm p\sqrt{p}}{p} \Rightarrow \left. \begin{matrix} m_1 = \frac{\sqrt{p}}{p} \\ m_2 = -\sqrt{p} \end{matrix} \right\} \text{حلول}$$

$$\frac{-p}{p} < \alpha < \frac{p}{p} \Rightarrow \frac{-p}{p} < -\alpha < \frac{p}{p} \Rightarrow 0 < \frac{p}{p} - \alpha < \frac{p}{p}$$

$$\tan 0 < \tan\left(\frac{p}{p} - \alpha\right) < \tan \frac{p}{p} \Rightarrow 0 < \frac{1-m}{1+m} < 1$$

$$\hookrightarrow -p < m < 1$$

$$\tan(45^\circ) \cos(45^\circ) + \tan(135^\circ) \sin(135^\circ) = \tan(135^\circ) \sin(135^\circ)$$

$$-\sqrt{p} \times \frac{-\sqrt{p}}{p} + -\sqrt{p} \times \frac{\sqrt{p}}{p} = \frac{p}{p} + \frac{-p}{p} = 0$$