

مساحت مثلث = $\frac{1}{2} \times 2x \times 3x \times \sin 150 = \frac{3}{2} x^2$ **دقت!**

مساحت متوازی السطوح = $2 \times \frac{3}{2} x^2 = 3x^2 = 54 \Rightarrow x = \sqrt{18}$

مساحت = $2x(2x + 3x) = 10x = 10\sqrt{18}$ **جواب**

$S_{ABC} = \frac{1}{2} \times 5 \times 7 \times \sin A = 17.5 \sin A$
 $S_{ADE} = \frac{1}{2} \times 2 \times 7 \times \sin A = 7 \sin A$

$\ominus \rightarrow 17.5 \sin A = 11.75$

$\sin A = \frac{1}{2} \rightarrow A = \frac{\pi}{6}$ ✓

$\tan \frac{\pi}{6} = \left(\frac{1}{\sqrt{3}} \right)$ **جواب** ✓

$\frac{1}{\sqrt{\cos \alpha}} - \tan \alpha = \frac{1 + \sin \alpha}{|\cos \alpha|} = \frac{1}{|\cos \alpha|} - \frac{\sin \alpha}{\cos \alpha} = \frac{1 + \sin \alpha}{|\cos \alpha|} \Rightarrow \cos \alpha < 0$

$\frac{|\sin \alpha|}{\cos \alpha} = -\frac{1}{\cos \alpha} = -\frac{\sin \alpha}{\cos \alpha} \xrightarrow{\cos \alpha < 0} \sin \alpha < 0$ **جواب** **ناحیه سوم** ✓

استقامه از شیب خط = $\frac{\Delta y}{\Delta x} = \frac{-1.5}{2} = -\frac{3}{4} = \tan \alpha$

$\tan \left(\frac{\pi}{2} - \alpha \right) = \cot \alpha = \frac{-2}{3}$ **جواب** ✓

$\frac{3 \cos(225^\circ) - 2 \sin(150^\circ)}{\sin(202^\circ) - \cos(242^\circ)} = \frac{3 \cos\left(\frac{5\pi}{4} - 90^\circ\right) - 2 \sin(\pi - 90^\circ)}{\sin(\pi + 90^\circ) - \cos\left(\frac{5\pi}{4} + 90^\circ\right)} = \frac{-3 \sin 90^\circ - 2 \sin 90^\circ}{-\sin 90^\circ - \sin 90^\circ}$
 $= \frac{-5 \sin 90^\circ}{-2 \sin 90^\circ} = \frac{5}{2}$ **جواب** ✓

$\frac{\sin\left(\frac{\pi}{2} + \alpha\right) - \sin(\alpha - \pi)}{|\tan \alpha - 1|} = \frac{\cos \alpha + \sin \alpha}{|\tan \alpha - 1|} = \frac{\frac{2}{3} + \left(\frac{-\sqrt{5}}{3}\right)}{\left|\frac{2}{3} - 1\right|} = \frac{2 - \sqrt{5}}{\frac{1}{3}}$
 $= \frac{6 - 3\sqrt{5}}{1}$ **جواب** ✓

$\cos \alpha = \frac{2}{3}$
 $\sin \alpha = \frac{-\sqrt{5}}{3}$
 $\tan \alpha = \frac{-\sqrt{5}}{2}$

$-\sin \alpha = 2 \cos \alpha \rightarrow \sin^2 \alpha + \cos^2 \alpha = 1 \rightarrow 4 \cos^2 \alpha + \cos^2 \alpha = 1 \rightarrow \cos^2 \alpha = \frac{1}{5}$

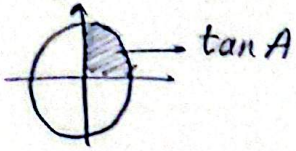
$\cos \alpha = \frac{-1}{\sqrt{5}}$ **جواب** ✓

$$2m\alpha - (m^2 - 1)y = 3 \quad \text{شیب خط} = \frac{-2m}{-m^2 + 1} = \frac{2m}{m^2 - 1} = \tan 45^\circ = \sqrt{3} \quad (2) \text{ (A)}$$

$$\sqrt{3}m^2 - \sqrt{3} = 2m \rightarrow \sqrt{3}m^2 - 2m - \sqrt{3} = 0 \quad m \text{ اختلاف قلم} = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{14}}{\sqrt{3}} = \frac{\sqrt{42}}{3} \quad \text{جواب}$$

$$\Delta = b^2 - 4ac = 2^2 - 4(\sqrt{3})(-\sqrt{3}) = 14$$

$$\frac{-\pi}{2} < \alpha < \frac{\pi}{2} \xrightarrow{\alpha(-1)} \frac{-\pi}{2} < -\alpha < \frac{\pi}{2} \xrightarrow{+\frac{\pi}{2}} \frac{\pi}{2} - \alpha < \frac{\pi}{2} \Rightarrow A = \frac{\pi}{2} - \alpha \quad (2) \text{ (9)}$$



$$\bullet \langle \tan A \rangle + \infty$$

$$\frac{1-m}{2+m} > 0 \quad \frac{-2}{-1} + \frac{1}{-1} \Rightarrow m = (-2, 1) \quad \text{جواب}$$

$$\tan(30^\circ) \cos(45^\circ) + \tan(45^\circ) \sin(30^\circ)$$

$$\underbrace{\tan(30^\circ)}_{-\cot 30^\circ} \times \underbrace{\cos(45^\circ)}_{-\sin 45^\circ} + \underbrace{\tan(45^\circ)}_{\tan 45^\circ} \times \underbrace{\sin(30^\circ)}_{-\sin 30^\circ}$$

$$\left(-\sqrt{3} \times \frac{\sqrt{2}}{2} \right) + \left(-\sqrt{3} \times \frac{\sqrt{2}}{2} \right) = 0 \quad \text{جواب}$$