

نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ۱۱ کلاس
 نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ۱۱ کلاس

$$\sec \alpha = 1 + \tan \alpha = \frac{1}{\cos \alpha} \rightarrow \sec \alpha = 1 \rightarrow \cos \alpha = 1 \quad \text{فرم ۳}$$

$$\cos \alpha = 1 \rightarrow \alpha = 2k\pi \quad \text{در بازه } [0, 2\pi] \quad \frac{\pi}{3} \text{ و } \frac{5\pi}{3} \quad \text{۱}$$

پایه ۲ جواب در بازه $[0, 2\pi]$ باید قرار داشته باشد

$$\alpha = 2k\pi - \frac{\pi}{3} \quad k=1 \rightarrow \alpha = \frac{5\pi}{3}$$

$$2 \sin^2 \alpha + \cos^2 \alpha = -1 \quad |\cos \alpha| \leq 1 \rightarrow -1 \leq \cos^2 \alpha \leq 1 \quad \text{و } \sin^2 \alpha \geq 0$$

$$\rightarrow \sin \alpha = 0 \rightarrow \alpha = k\pi \quad \cos^2 \alpha = -1 \rightarrow \cos \alpha = -1 \rightarrow$$

$$\alpha = 2k\pi + \pi \rightarrow \alpha = \frac{3\pi}{2} \quad \text{در بازه } [0, 2\pi] \quad \text{۲}$$

پایه ۲ جواب

$$\sin \alpha \cos \alpha + \sin \alpha = 1 \quad | \sin \alpha | \leq 1 \quad \sin \alpha \cos \alpha + \sin \alpha - \sin \alpha - \cos \alpha = 0$$

$$\rightarrow \cos \alpha (\sin \alpha - 1) = \sin \alpha (\cos \alpha - 1) \quad \sin \alpha - 1 = 0 \rightarrow \cos \alpha = \sin \alpha = \cos \left(\frac{\pi}{4} \right)$$

$$\sin \alpha - 1 = 0 \rightarrow \sin \alpha = 1 \rightarrow \alpha = \frac{\pi}{2} \quad \text{در بازه } [0, 2\pi] \quad \frac{\pi}{6} + \frac{5\pi}{6} + \frac{7\pi}{6} = \frac{13\pi}{6}$$

$$\alpha = 2k\pi + \left(\frac{\pi}{4} - \alpha \right) \rightarrow \alpha = \frac{1}{2} \pi + \frac{\pi}{4}$$

$$\alpha = 2k\pi - \left(\frac{\pi}{4} - \alpha \right) \rightarrow \alpha = \frac{3\pi}{4}$$

$$\frac{1}{\sin \left(\frac{\pi}{4} + \frac{\pi}{4} \right)} + \frac{1}{\cos \left(\frac{\pi}{4} + \frac{\pi}{4} \right)} = \frac{1}{\cos \alpha} + \frac{1}{\sin \alpha} = \frac{-\sin \alpha + \cos \alpha}{-\sin \alpha \cos \alpha} = 0$$

$$\sin \alpha \cos \alpha \neq 0 \rightarrow \sin \alpha = \cos \alpha \rightarrow \sin \alpha \cos \alpha = \cos \alpha \rightarrow \sin \alpha = 1 \quad \sin \alpha = 0$$

$$\sin \alpha \neq 0 \rightarrow \alpha \neq 0 \text{ و } \frac{\pi}{2} \quad \cos \alpha \neq 0 \rightarrow \alpha \neq \frac{\pi}{2} \text{ و } \frac{3\pi}{2}$$

$$\rightarrow \alpha = \frac{3\pi}{4} - \frac{\pi}{4} = \frac{\pi}{2} \quad \tan \frac{\pi}{4} = -\sqrt{3} \quad \text{۳}$$

$$\cos \left(\alpha + \frac{\pi}{4} \right) = \cos \alpha \cos \frac{\pi}{4} - \sin \alpha \sin \frac{\pi}{4} = \frac{\sqrt{2}}{2} (\cos \alpha - \sin \alpha) = \frac{1}{\sqrt{2}}$$

$$\rightarrow \cos \alpha - \sin \alpha = \frac{1}{\sqrt{2}} \quad \text{۴} \quad \cos^2 \alpha + \sin^2 \alpha - \sin \alpha \cos \alpha = \frac{1}{2} = \frac{1}{2}$$

$$\rightarrow \sin \alpha = \frac{1}{\sqrt{2}} \quad \frac{1}{\sqrt{2}} - \frac{1}{\sqrt{2}} = \sqrt{2} \rightarrow m = 6 \quad \text{۵}$$

$$\sin(\alpha + \frac{\pi}{2}) \cos(\pi - \frac{\pi}{2}) = \sin(\alpha + \frac{\pi}{2}) \cos(\frac{\pi}{2} - \alpha) = 1 \quad \text{دوران مستقیم}$$

$$\sin^2(\alpha + \frac{\pi}{2}) = 1 \rightarrow \sin(\alpha + \frac{\pi}{2}) = \pm 1 \rightarrow \alpha + \frac{\pi}{2} = k\pi + \frac{\pi}{2} \rightarrow \alpha = k\pi + \frac{\pi}{2}$$

$$\text{جواب: } \frac{\pi}{3} \text{ و } \frac{5\pi}{3}$$

جواب ۲

۲

$$\sin \alpha + \tan \frac{\pi}{3} \cos \alpha = \frac{\sin \alpha \cos \frac{\pi}{3} + \sin \frac{\pi}{3} \cos \alpha}{\cos \frac{\pi}{3}} = \frac{\sin(\alpha + \frac{\pi}{3})}{\frac{1}{2}} = \sqrt{2}$$

۱, ۱, ۵

$$\rightarrow \sin(\alpha + \frac{\pi}{3}) = \frac{\sqrt{2}}{2} \Rightarrow \alpha = 2k\pi - \frac{\pi}{6} \text{ یا } \alpha = 2k\pi + \frac{5\pi}{6}$$

این جزو جواب های اصلی شده بر حسب ۲کن

$$\text{جواب: } -\frac{\pi}{12} \text{ و } \frac{5\pi}{12} \text{ و } \frac{11\pi}{12} \text{ و } \frac{13\pi}{12} \rightarrow \frac{11\pi}{12} = \frac{5\pi}{12}$$

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

$$2\alpha = 2k\pi + \frac{7\pi}{6} \rightarrow \alpha = k\pi + \frac{7\pi}{12}$$

$$2\alpha = 2k\pi + \frac{11\pi}{6} \rightarrow \alpha = k\pi + \frac{11\pi}{12}$$

$$\text{جواب: } \frac{7\pi}{12} + \frac{11\pi}{12} = \frac{18\pi}{12} = \frac{3\pi}{2}$$

۱, ۱, ۵

$$k=1 \rightarrow \alpha = \pi + \frac{7\pi}{12} \rightarrow \frac{19\pi}{12}$$

$$\alpha = \pi + \frac{11\pi}{12} \rightarrow \frac{23\pi}{12}$$

$$\rightarrow (\frac{7+11+19+23}{12})\pi = \frac{60\pi}{12} = 5\pi$$

۱

$$1 + \cos 2\alpha = 2 \cos^2 \alpha \quad 1 + \cos 5\alpha = 2 \cos^2 \frac{5\alpha}{2} \quad 1 + \cos 11\alpha = 2 \cos^2 \frac{11\alpha}{2}$$

$$\frac{\sin^2 \alpha}{\sin^2 \frac{\alpha}{2}} \times 2 \cos^2 \alpha \times 2 \cos^2 \frac{5\alpha}{2} \times 2 \cos^2 \frac{11\alpha}{2} = \frac{\sin^2 \alpha}{\sin^2 \frac{\alpha}{2}} \times \cos^2 \frac{5\alpha}{2} =$$

$$\frac{\sin^2 \alpha}{\sin^2 \frac{\alpha}{2}} = \frac{1}{\cos^2 \frac{\alpha}{2}} \rightarrow \sin^2 \alpha = \sin^2 \frac{\alpha}{2} \rightarrow \sin \alpha = \pm \sin \frac{\alpha}{2} \Rightarrow \alpha = \frac{2k\pi}{3}$$

۹

$$\text{جواب: } A: \{ \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{8\pi}{3}, \frac{10\pi}{3}, \frac{14\pi}{3}, \frac{16\pi}{3} \} \quad \text{Max } A = \frac{16\pi}{3}$$

$$\tan 2\alpha = \frac{1}{\tan \alpha} = \cot \alpha = \tan(\frac{\pi}{2} - \alpha) \rightarrow 2\alpha = k\pi + \frac{\pi}{2} - \alpha \rightarrow$$

$$\alpha = \frac{k\pi}{3} + \frac{\pi}{3} \quad \text{جواب: } \frac{4\pi}{3}, \frac{11\pi}{3}, \frac{14\pi}{3}, \frac{16\pi}{3}$$

$$\text{جواب: } \frac{4\pi + 11\pi + 14\pi + 16\pi}{3} = \frac{45\pi}{3} = 15\pi$$

۲

۱۰