

$$\frac{D}{1\lambda_0} = \frac{R}{\pi} = \frac{G}{100}$$

19

فصلهای اول و دوم

مسئله ۱

الف) $\frac{PV}{1\lambda_0} = \frac{R}{\pi} \Rightarrow R = \frac{PV\pi}{1\lambda_0} = \frac{13\pi}{10}$

ب) $\frac{125}{1\lambda_0} = \frac{Ra}{\pi} \Rightarrow Ra = \frac{125\pi}{1\lambda_0} = \frac{125\pi}{100}$

✓

ج) $\frac{\frac{5\pi}{12}}{\pi} = \frac{D}{1\lambda_0} \Rightarrow \frac{5}{12} = \frac{D}{1\lambda_0} \Rightarrow D = \frac{5 \cdot 12}{12} = 5$

د) $\frac{\frac{4\pi}{9}}{\pi} = \frac{D}{1\lambda_0} \Rightarrow \frac{4}{9} = \frac{D}{1\lambda_0} \Rightarrow D = \frac{4 \cdot 1\lambda_0}{9} = \frac{4}{9}$

$$10a + \frac{125a}{9} G + \frac{a\pi}{\lambda} Ra = 1\lambda_0$$

مسئله ۲

$$\frac{125a}{9 \cdot \frac{100}{1}} = \frac{D}{1\lambda_0} = \frac{125a \times 1}{9 \times 100} = \frac{D}{1\lambda_0} \Rightarrow \frac{5a}{72} = \frac{D}{1\lambda_0} \Rightarrow D = \frac{5a \times 1\lambda_0}{72} = 12,5a$$

✓

$$\frac{a\pi}{\lambda} = \frac{D}{1\lambda_0} \Rightarrow \frac{1}{\lambda} \pi = \frac{D}{1\lambda_0} \Rightarrow D = \frac{1\lambda_0}{\lambda} a = 12,5a$$

$$\Rightarrow 10a + 12,5a + 12,5a = 1\lambda_0 \Rightarrow 35a = 1\lambda_0 \Rightarrow a = \frac{1\lambda_0}{35}$$

الف) $\frac{1}{\frac{1}{\sqrt{10}} \times \frac{\sqrt{10}}{10}} - \left(\frac{\sqrt{10}}{1} \times \frac{1}{1} \right) - 1 + 1 = 1$

مسئله ۳

ب) $\frac{(\frac{\sqrt{10}}{10})^2 + 1 + (\sqrt{10})^2}{\sqrt{10} - \frac{\sqrt{10}}{10}} = \frac{\frac{10}{9} + \frac{4}{9} + \frac{10}{9}}{\frac{10\sqrt{10} - \sqrt{10}}{10}} = \frac{\frac{24}{9}}{\frac{9\sqrt{10}}{10}} = \frac{1}{\frac{3}{4} \times \frac{10}{\sqrt{10}}} = \frac{1}{\frac{10\sqrt{10}}{4}} = \frac{4}{10\sqrt{10}}$

✓

روزگار داشت شیخ بهائی - روز معماری - شهادت امیر سیهید قرنی

4

سه شنبه

۴ اردیبهشت

۱۴ شوال ۱۴۴۵

23 April 2024

سؤال ۴ :

$$-\frac{1}{P} \times \frac{1}{P} + \frac{\sqrt{P}}{P} \times \frac{\sqrt{P}}{P} = \sin^2 \theta$$

$$-\frac{1}{P} + \frac{P}{P} = \sin^2 \theta \Rightarrow \frac{P}{P} = \sin^2 \theta = \sin^2 \theta = \pm \frac{\sqrt{P}}{P}$$

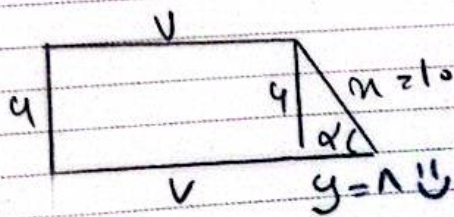
$$1 + \tan^2 = \frac{1}{\left(\pm \frac{\sqrt{P}}{P}\right)} \Rightarrow 1 + \tan^2 = P \Rightarrow \tan^2 = 1 \Rightarrow \tan = \pm 1 \quad \text{(پیش فرض ها)}$$

$$\left(\frac{P \times \sqrt{P}}{P} \right) \left(1 - \frac{P}{9} \right) = \frac{\frac{P \sqrt{P}}{P}}{\frac{P}{P}} = \sqrt{P} \Rightarrow \theta = 45^\circ$$

$$\left(1 - \frac{P}{9} \right) P = \frac{P}{P}$$

$$\frac{90}{100} = \frac{R_a}{R} \Rightarrow R_a = \frac{90}{100} R = \frac{9}{10} R$$

$$\frac{P \sin \theta - \cos \theta}{\sin \theta - P \cos \theta} \xrightarrow{\frac{P \sin \theta}{\cos \theta}} \frac{P \tan \theta - 1}{\tan \theta - P} = \frac{10 - 1}{5 - P} = 14 \quad \text{(سؤال ۴)}$$



$$\sin \alpha = \frac{4}{10} = \frac{4}{10}$$

$$\Rightarrow \alpha = 10^\circ$$

$$10^2 = 4^2 + y^2 \Rightarrow y = \pm \sqrt{100 - 16} = 8$$

$$مساحت = \frac{1}{2} \times 4 \times 10 + 10 \times 10 = 100$$

$$\sin 45^\circ = \frac{BD}{10} = \frac{\sqrt{10}}{P} = \frac{BD}{10} \Rightarrow BD = 5\sqrt{10} \left(\frac{\sqrt{10} \times 10}{P} \right)$$

$$\Rightarrow AB = \pm \sqrt{100 - \left(\frac{5\sqrt{10}}{P} \right)^2} \Rightarrow AB = \sqrt{10} = 3.16$$

$$\Rightarrow BC = 5 \quad \text{(مساحت المثلثين)} = OC, BO, BC = 5\sqrt{10} - 5$$

در ناحیه سوم با افزایش θ سینوس از ص ۱- کاهش و کسینوس

الف) نامعلوم: $\frac{\pi}{2}$ ک ۴ ک ۲ ک ۲

از ۱- به ۰ افزایش می یابد

ب) نامعلوم: $\frac{\pi}{2}$ ک ۴ ک ۲



سوال ۴

۱

$$1 + \tan^2 \theta = \frac{1}{\cos^2 \theta} \Rightarrow 1 + \left(\frac{1}{3}\right)^2 = \frac{1}{\cos^2 \theta}$$

سوال ۱۵

$$1 + \frac{1}{9} = \frac{1}{\cos^2 \theta} \Rightarrow \frac{10}{9} = \frac{1}{\cos^2 \theta} \Rightarrow \cos^2 \theta = \frac{9}{10} \Rightarrow \cos \theta = \pm \frac{3}{\sqrt{10}}$$

نامعلوم $\Rightarrow \cos \theta = -\frac{3}{\sqrt{10}}$

۲

$\sin^2 \theta + \cos^2 \theta = 1 \Rightarrow \sin = -\sqrt{1 - \cos^2 \theta}$
نامعلوم

$$\Rightarrow \sin = -\sqrt{1 - \frac{9}{10}} = \sin = -\frac{1}{\sqrt{10}} = -\frac{\sqrt{10}}{10}$$