

بلیا انوری - دهم B

سؤال ۱:

$$\text{الف) } 27^\circ = (x) \text{ rad} \rightarrow \frac{27}{180} = \frac{\text{rad}}{\pi} \rightarrow \frac{27\pi}{180} = \frac{3\pi}{20} = \frac{3\pi}{20}$$

$$\text{ب) } 125^\circ = (x) \text{ rad} \rightarrow \frac{125}{180} = \frac{\text{rad}}{\pi} \rightarrow \frac{125\pi}{180} = \frac{25\pi}{36}$$

$$\text{ج) } \frac{5\pi}{12} \text{ rad} = (x)^\circ \rightarrow \frac{\frac{5\pi}{12}}{\pi} = \frac{D}{180} \Rightarrow \frac{5}{12} \times 180 = 75^\circ$$

$$\text{د) } \frac{4\pi}{9} \text{ rad} = (x)^\circ \rightarrow \frac{\frac{4\pi}{9}}{\pi} = \frac{D}{180} \Rightarrow \frac{4}{9} \times 180 = 80^\circ$$

سؤال ۲:  $a$  را درج،  $\frac{125a}{9}$  را درج،  $\frac{a\pi}{18}$  را درج

$$\frac{\frac{125a}{9}}{\frac{4\pi}{9}} = \frac{D}{180} \rightarrow \frac{\frac{125a}{9} \times 9}{4\pi} = \frac{125a}{4\pi} = \frac{125a}{4\pi}$$

$$\frac{\frac{a\pi}{18}}{\pi} = \frac{D}{180} \rightarrow \frac{a}{18} \times 180 = 10a$$

$$\Rightarrow \frac{10a}{2} + \frac{125a}{2} + \frac{45a}{2} = 180$$

$$\frac{180a}{2} = 180 \rightarrow \boxed{a=2}$$

سؤال ۳: الف)  $\cos 40^\circ \cos 30^\circ - \sin 40^\circ \sin 30^\circ - \tan 45^\circ + 2 \cot 45^\circ =$

$$= \left( \frac{1}{2} \times \frac{\sqrt{3}}{2} \right) - \left( \frac{\sqrt{3}}{2} \times \frac{1}{2} \right) - 1 + 2 = 1$$

$$\text{ب) } \frac{\tan 30^\circ + \tan 45^\circ + \tan 60^\circ}{\cot 30^\circ - \cot 45^\circ} = \frac{\frac{1}{\sqrt{3}} + 1 + \sqrt{3}}{\sqrt{3} - \frac{1}{\sqrt{3}}} = \frac{\frac{1+\sqrt{3}+3}{\sqrt{3}}}{\frac{3-1}{\sqrt{3}}} = \frac{1+\sqrt{3}+3}{3-1} = \frac{4+\sqrt{3}}{2}$$

$$-\sin^3 \theta_0 \cos \theta_0 + \cos^3 \theta_0 \sin \theta_0 = \sin^2 \theta$$

سؤال ٤:  $\tan \theta = ?$ 

$$\frac{-1}{4} \times \frac{1}{4} + \frac{\sqrt{3}}{4} \times \frac{\sqrt{3}}{4} = \sin^2 \theta \rightarrow \frac{-1}{4} + \frac{3}{4} = \frac{2}{4} = \frac{1}{2} \rightarrow \sin^2 \theta = \frac{1}{2}$$

$$\sin \theta = \sqrt{\frac{1}{2}} \rightarrow \pm \frac{1}{\sqrt{2}} = \pm \frac{\sqrt{2}}{2} \rightarrow \theta = 45^\circ \rightarrow \tan 45^\circ = \pm 1$$

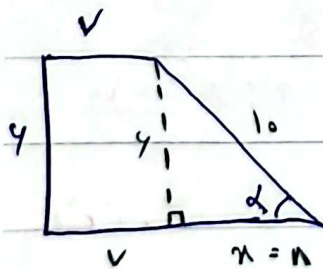
$$\frac{2 \tan \theta_0 (1 - \tan^2 \theta_0)}{(1 - \cot^2 \theta_0)^2} = \tan \theta$$

سؤال ٥:  $\theta$  بـ رادین

$$\frac{\frac{2\sqrt{3}}{4} \times \frac{1}{4}}{1 - \frac{1}{4}} = \frac{\frac{2\sqrt{3}}{4}}{\frac{3}{4}} = \sqrt{3} \rightarrow \tan \theta = \sqrt{3} \rightarrow \theta = 60^\circ \rightarrow \frac{60}{180} = \frac{\text{Rad}}{\pi}$$

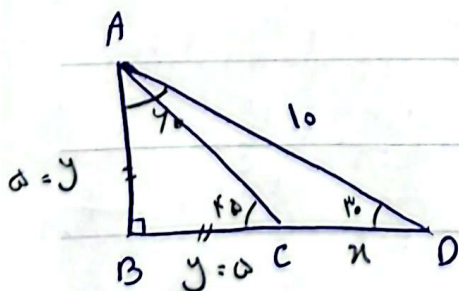
$$\Rightarrow \text{Rad} = \frac{\pi}{3}$$

$$\frac{3 \sin \theta - \cos \theta}{\sin \theta - 4 \cos \theta} = \frac{\frac{3 \sin}{\cos} - 1}{\frac{\sin}{\cos} - 4} = \frac{14}{1} = 14$$

سؤال ٦:  $\tan \theta = 5$ سؤال ٧:  $\sin \theta = \frac{4}{10}$  میله ذوزنقه؟

$$\rightarrow x^2 = 100 - 16 \rightarrow x^2 = 84 \rightarrow x = 8$$

$$P = 4 + 14 + 8 + 10 = 36$$

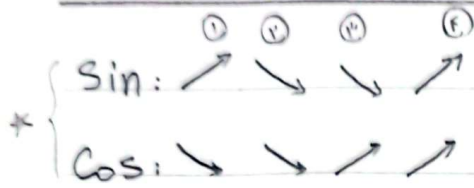


سؤال ٨:

$$\sin \theta_0 = \frac{y}{10} = \frac{1}{2} \rightarrow y = 5$$

$$\sin \theta = \frac{\text{مقابل}}{\text{وتر}} = \frac{\sqrt{3}}{2} \rightarrow \frac{\sqrt{3}}{2} \times 10 = 5\sqrt{3} = BD$$

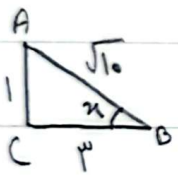
$$CD = BD - BC = 5\sqrt{3} - 5$$



سؤال ۹:

الف) صبیح ۴ در ربع سوم قرار دارد

ب) صبیح ۴ در ربع دوم قرار دارد

سؤال ۱۰:  $\tan x = \frac{1}{3}$  در ربع ③ مقدار Sin ؟

$$AB^2 = 1 + 9 = 10 \rightarrow AB = \sqrt{10}$$

 $\rightarrow \sin < 0$ 

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