۱۸٫۲۵

پژوهشی سبز علی ۴

۱) الف)

$\frac{D}{180} = \frac{Rad}{\pi}$

$Rad = D \times \frac{\pi}{180} \rightsquigarrow 27 \times \frac{\pi}{180} = \frac{3\pi}{20}$

ب) $Rad = 125 \times \frac{\pi}{180} = \frac{25\pi}{36}$

ج) $\frac{D}{180} = \frac{\frac{5\pi}{12}}{\frac{\pi}{1}} = 75°$

د) $\frac{D}{180} = \frac{\frac{4\pi}{9}}{\pi} = 80°$

۲) $\frac{1255}{9}$ ① $\rightsquigarrow \frac{D}{180} = \frac{G}{200} \rightsquigarrow \frac{D}{180} = \frac{\frac{1255}{9}}{\frac{200}{1}} \to \frac{1255°}{10}$

$\frac{D}{180} = \frac{\pi}{4\pi} \times 180 = \frac{455}{2}°$

$\frac{1255}{10} + \frac{455}{2} + 10a = 180$

$a = 4°$

4 الف) $\left(-\frac{1}{3} \times \frac{1}{2}\right) + \left(\frac{\sqrt{3}}{2} \times \frac{\sqrt{3}}{2}\right) = \sin^2\theta \to -\frac{1}{4} + \frac{3}{4} = \frac{2}{4} \to \frac{1}{2}$

$\sin^2\theta \to \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \pm\frac{\sqrt{2}}{2} = \sin\theta$

$\tan = 1$

$\sin = +\frac{\sqrt{2}}{2}$

$\cos = +\frac{\sqrt{2}}{2}$

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

[illegible]

ب) $\dfrac{\left(\frac{\sqrt{3}}{2}\right)^2 + 1 + \left(\sqrt{3}\right)^2}{\sqrt{3} - \frac{\sqrt{3}}{3}} \rightarrow \dfrac{\frac{3}{4} + 4}{\frac{3\sqrt{3}}{3} - \frac{\sqrt{3}}{3}} = \boxed{\dfrac{13\sqrt{3}}{4}}$ (۲)

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5 الف) $\dfrac{\frac{2\sqrt{3}}{3}\left(1 - \frac{3}{9}\right)}{\left(1 - \frac{3}{9}\right)^2} \longrightarrow \dfrac{\frac{2\sqrt{3}}{3} \times \frac{6}{9}}{\frac{36}{81}} = \left(\dfrac{\frac{4\sqrt{3}}{9}}{\frac{36}{81}}\right) = \dfrac{4\sqrt{3} \times 81}{9 \times 36} = \sqrt{3}$ ← $\tan\theta$

$\tan\theta = \sqrt{3} \rightarrow \tan 60^\circ \rightarrow \dfrac{D}{180} = \dfrac{Rad}{\pi}$ (۳)

$\dfrac{60}{180} = \dfrac{Rad}{\pi} \rightarrow \dfrac{60\pi}{180} \rightarrow \boxed{Rad = \dfrac{\pi}{3}}$

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6 $\dfrac{3(5) - 1}{5 - 4(1)} = \dfrac{14}{1} = \boxed{14}$ $\tan\theta = 5 \rightarrow \boxed{\dfrac{\sin\theta}{\cos\theta} = 5}$ (۲)

$\cot = \boxed{\dfrac{1}{5}}$

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7 $\sin\alpha = \dfrac{6}{10} \rightarrow \dfrac{\text{مقابل}}{\text{وتر}}$ $6 = x \times \dfrac{6}{10} \rightarrow \boxed{10}$

$B^2 + C^2 = AB^2 \rightarrow 36 + C^2 = 100$ $\boxed{C = 8}$ (۳)

محیط $= 7 + 6 + 7 + 8 + 10 = \boxed{38}$

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8 $\cos A = \cos 60^\circ = \dfrac{AB}{10} \rightarrow \dfrac{1}{2} = \dfrac{AB}{10} \rightarrow BC = 5$ (۱/۷۵)

$\cos 30^\circ = \dfrac{\sqrt{3}}{2} = \dfrac{5}{AC} \rightarrow \dfrac{5\sqrt{3}}{2}$ $5\sqrt{3}$

$5^2 + BD^2 = 10^2$

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

$5\sqrt{3} - 5$

هستی سبزعلی

الف) = در ناحیه سوم / ب) ناحیه دوم

۹ راه حل؟

۰/۵

۱۵ (۲)

$\sin < 0 \rightarrow 3$ $\quad$ $\tan\theta = \frac{1}{3}$

$\cos < 0 \rightarrow 3$ $\quad$ $y^2 = 1^2 + 3^2 = 10$

$\tan > 0 \rightarrow 3$ $\quad$ $y = \sqrt{10} \rightsquigarrow \sin\theta = \frac{-1}{y} = \frac{-1}{\sqrt{10}}$ در ناحیه سوم