

کلاس دهم A دفتر -
تاریخ: ۱۸:۳۰ و ۱۹:۳۰

تکلیف شماره ۱۶
مسابقات

مرتبه پرورش ۲۵

$$\text{الف) } \frac{r_v}{180} = \frac{n}{\pi} \rightarrow n = \frac{2\pi \text{ Rad}}{r_v}$$

$$\frac{D}{180} = \frac{G}{r_v} = \frac{\text{Rad}}{\pi}$$

$$\text{ب) } \frac{125}{180} = \frac{n}{\pi} \rightarrow \frac{25\pi \text{ Rad}}{36}$$

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$$\text{ج) } \frac{5\pi}{12} = \frac{n}{180} \rightarrow n = 75^\circ$$

$$\text{د) } \frac{f\pi}{9} = \frac{n}{180} \rightarrow n = 180^\circ$$

$$\frac{125}{9} = \frac{n}{180} \Rightarrow \frac{125}{9} \times \frac{180}{1} = 1250^\circ$$

$$\frac{a\pi}{8} = \frac{n}{180} \Rightarrow n = 225^\circ$$

$$1250^\circ + 2250^\circ + 100^\circ = 180^\circ$$

$$450^\circ = 180^\circ \Rightarrow a = 4$$

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$$\text{الف) } \left(\frac{1}{4} \times \frac{\sqrt{3}}{2}\right) - \left(\frac{\sqrt{3}}{2} \times \frac{1}{4}\right) - 1 + 2 = 1$$

$$\text{ب) } \frac{\frac{3}{4} + 1 + 2}{\sqrt{3} - \frac{\sqrt{3}}{2}} = \frac{13}{4} \times \frac{2}{\sqrt{3}} = \frac{13\sqrt{3}}{2}$$

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

$$-\frac{1}{16} + \frac{3}{16} = \frac{2}{16}$$

$$\sin \theta = \pm \sqrt{\frac{2}{16}} \Rightarrow \theta < 90^\circ \Rightarrow \sin \theta = \frac{\sqrt{2}}{4} \Rightarrow \theta = 45^\circ$$

$$\tan \theta = \tan 45^\circ = 1$$

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

$$\sqrt{3} = \tan \theta \Rightarrow \theta = 60^\circ$$

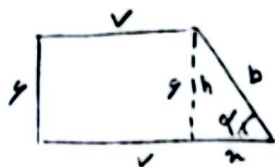
$$\frac{5}{180} = \frac{n}{\pi}$$

$$n = \frac{\pi}{18} \text{ Rad}$$

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$$\frac{r \sin \theta - \cos \theta}{\sin \theta - r \cos \theta} \xrightarrow{\div \cos \theta} \frac{r \tan \theta - 1}{\tan \theta - r} = \frac{1r}{1} = r$$

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$$\sin \alpha = \frac{y}{b} = \frac{y}{10} \Rightarrow b = 10$$

$$r^2 + n^2 = 100 \quad n = 8$$

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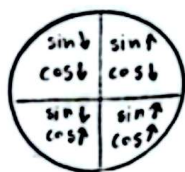
$$P = v + y + (v + n) + 10 = 38$$

$$\triangle ADB \text{ قائم الزاوية } \sin A = \frac{BD}{AD} \rightarrow \frac{\sqrt{5}}{5} = \frac{BD}{10} \Rightarrow BD = 2\sqrt{5}$$

$$\cos A = \frac{AB}{AD} \rightarrow \frac{1}{5} = \frac{AB}{10} \Rightarrow AB = 2 = BC \text{ متساوي الساقين } ABC$$

$$CD = 2\sqrt{5} - 2 = 2(\sqrt{5} - 1)$$

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الف) زاوية 3

ب) زاوية 2

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$$\cot x = \frac{1}{\tan x} = 3$$

$$1 + \cot^2 x = \frac{1}{\sin^2 x} \Rightarrow 1 + 9 = \frac{1}{\sin^2 x}$$

$$\sin x = \pm \sqrt{\frac{1}{10}} \xrightarrow{\sin \text{ زاوية 2}} \sin x = -\sqrt{\frac{1}{10}} = -\frac{\sqrt{10}}{10}$$

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