

Subject: ()

Date: _____

$$\text{الف) } 27^\circ = (x) \text{ rad} \Rightarrow \frac{D}{180} = \frac{\text{Rad}}{\pi} \Rightarrow \frac{27}{180} = \frac{\text{Rad}}{\pi} \quad (1)$$

$$\frac{27\pi}{180} = \left[\frac{3\pi}{20} \right]$$

✓

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

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

✓

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

$$10a^\circ + \frac{10a^\circ}{4} + 22,5a^\circ = 180^\circ \Rightarrow 15a^\circ = 180^\circ \Rightarrow a = 12^\circ \quad (2)$$

$$\frac{120a}{9} \rightarrow \frac{G}{180} = \frac{D}{180} \Rightarrow \frac{120a}{180} = \frac{D}{180} \Rightarrow D = 120a$$

$$\frac{a\pi}{1} \rightarrow \frac{D}{180} = \frac{\frac{a\pi}{1}}{\pi} \Rightarrow \frac{D}{180} = \frac{a}{1} \Rightarrow D = 180a$$

$$\text{الف) } \cos 40^\circ \cos 30^\circ - \sin 40^\circ \sin 30^\circ = \tan 40^\circ + \cot 40^\circ \quad (3)$$

$$\frac{1}{2} \times \frac{\sqrt{3}}{2} - \frac{\sqrt{3}}{2} \times \frac{1}{2} = \frac{\sqrt{2}}{2} + 2 \times \frac{\sqrt{2}}{2} = 1$$

✓

$$\text{ب) } \frac{\tan^2 30^\circ + \tan^2 40^\circ + \tan^2 50^\circ}{\cot 30^\circ \cot 40^\circ} = \left(\frac{1}{\sqrt{3}} \right)^2 + \left(\frac{\sqrt{3}}{3} \right)^2 + \left(\frac{\sqrt{3}}{3} \right)^2 = 1$$

$$\frac{\left(\frac{1}{\sqrt{3}} \right)^2 + 1 + (\sqrt{3})^2}{\sqrt{3} - \frac{1}{\sqrt{3}}} = \frac{\frac{1}{3} + 1 + 3}{\frac{3-1}{\sqrt{3}}} = \frac{\frac{4}{3}}{\frac{2}{\sqrt{3}}} = \frac{4\sqrt{3}}{6} = \frac{2\sqrt{3}}{3}$$

$$-\sin^2 \psi \cdot \cos^2 \psi + \cos^2 \psi \cdot \sin^2 \psi = \sin^2 \theta \quad (f)$$

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

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

(v) ✓

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$$\tan \theta = \frac{\frac{\sqrt{r}}{r}}{\frac{\sqrt{r}}{r}} = 1 = \frac{\sin \theta}{\cos \theta}$$

$$\sin^2 \theta + \cos^2 \theta = 1$$

$$\cos^2 \theta = 1 - \frac{r}{r} = \frac{r}{r} \quad (g)$$

$$\cos \theta = \pm \frac{\sqrt{r}}{r}$$

$$r \tan^2 \psi (1 - \tan^2 \psi) = \tan \theta \Rightarrow$$

$$(1 - \cot^2 \psi)$$

$$r \left(\frac{1}{\sqrt{r}} \right) \left(1 - \left(\frac{1}{\sqrt{r}} \right)^2 \right)$$

$$\left(1 - \left(\frac{1}{\sqrt{r}} \right)^2 \right) r$$

$$\left(\frac{r}{\sqrt{r}} \right) \left(1 - \frac{1}{r} \right)$$

$$\frac{r}{\sqrt{r}}$$

$$\frac{1}{\sqrt{r}}$$

$$\frac{1}{\sqrt{r}}$$

$$\tan \theta = \frac{r}{\sqrt{r}} \rightarrow \sqrt{r} \rightarrow \frac{1}{\sqrt{r}} = \frac{1}{\sqrt{r}} \sim a = \frac{\pi}{r} = \left[\frac{r}{r} \right]$$

$$\left[\frac{r}{r} \right] = a = k$$

$$\frac{r}{r} = \sqrt{r}$$

(v) ✓

$$1 + \tan^2 \alpha = \frac{1}{\cos^2 \alpha} \Rightarrow F = \frac{1}{r} \rightarrow \cos = \pm \frac{1}{r}$$

$$F = \frac{1}{r}$$

$$\cos = \pm \frac{1}{r} \left. \begin{array}{l} a = \frac{\pi}{r} \\ \frac{r}{r} \end{array} \right\} \sin = \pm \frac{\sqrt{r}}{r}$$

$$\sin^2 \alpha + \cos^2 \alpha = 1$$

$$\sin^2 \alpha = 1 - \frac{1}{r} = \frac{r}{r}$$

$$\sin \alpha = \frac{\sqrt{r}}{r}$$

$$\frac{r \sin \theta - \cos \theta}{\sin \theta - \cos \theta} = 60$$

(4)

$$\tan \theta$$

$$\frac{r \sin \theta}{\cos \theta} = 1$$

$$\frac{\sin \theta}{\cos \theta} = f$$

$$\frac{r \times 0 - 1}{0 - 1} = 11$$

(v) ✓

Arman

