

Subject:

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الف) $\frac{27}{18} = \frac{n}{18} \rightarrow n = \frac{27 \times 18}{18} \rightarrow n = \frac{3}{2} \times 18 \checkmark$

(21)

ب) $\frac{125}{18} = \frac{n}{18} \rightarrow n = \frac{125 \times 18}{18} \rightarrow n = \frac{25}{4} \times 18 \checkmark$

ج) $\frac{57}{18} = \frac{n}{18} \rightarrow n = 57 \checkmark$

د) $\frac{87}{9} = \frac{n}{18} \rightarrow \frac{87}{9} = \frac{n}{18} \rightarrow n = 18 \checkmark$

$\frac{125a}{9} = \frac{n}{18} \rightarrow n = \frac{125a \times 18}{9} = 12,5a \checkmark$

(22)

$\frac{18a}{18} = \frac{n}{18} \rightarrow \frac{18a}{18} \times 18 = 18,18a \checkmark$

$12,5a + 18,18a + 18a = 18$

$48,68a = 18 \rightarrow a = \frac{18}{48,68} \checkmark$

الف) $\frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2} \times \frac{1}{\sqrt{2}} - 1 + 1 \times 1 = 1 \checkmark$

(23)

ب) $\frac{\frac{1}{\sqrt{2}} + 1 + \frac{1}{\sqrt{2}}}{\sqrt{2} - \frac{1}{\sqrt{2}}} = \frac{\frac{1+\sqrt{2}+1}{\sqrt{2}}}{\frac{\sqrt{2}-1}{\sqrt{2}}} = \frac{1+\sqrt{2}+1}{\sqrt{2}-1} = \frac{1+\sqrt{2}}{\sqrt{2}-1} \checkmark$

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

$-\frac{1}{2} + \frac{2}{2} = \sin^2 \theta \rightarrow \frac{1}{2} = \sin^2 \theta \rightarrow \sin \theta = \frac{\sqrt{2}}{2} \checkmark$

(24)

$\theta = 45^\circ \text{ یا } 135^\circ$

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

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

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$$r \times \frac{\sqrt{r}}{r} \left(1 - \frac{1}{r}\right) = \tan \theta$$

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

(r)

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

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

$$= \tan \theta \rightarrow \tan \theta = \sqrt{r}$$

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

$$\theta = 90^\circ \text{ to } 180^\circ$$

$$\frac{r_0}{110} = \frac{n_0}{\pi} \rightarrow n = \frac{r_0 \pi}{110}$$

$$n = \frac{\pi}{r} \checkmark$$

$$\tan \theta = \Delta \rightarrow \frac{\sin \theta}{\cos \theta} = \Delta \rightarrow \sin \theta = \Delta \cos \theta$$

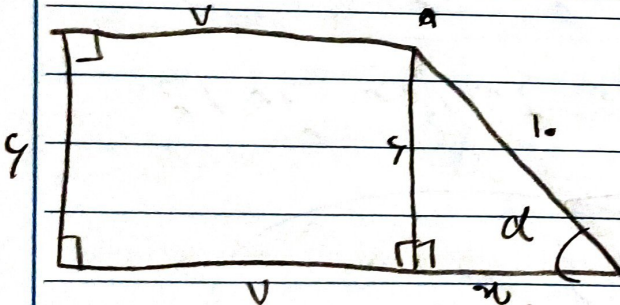
(r) - 9

$$r(\Delta \cos \theta) - \cos \theta$$

$$= \frac{10 \cos \theta - \cos \theta}{\cos \theta} = \frac{9 \cos \theta}{\cos \theta}$$

$$\Delta \cos \theta - \cos \theta$$

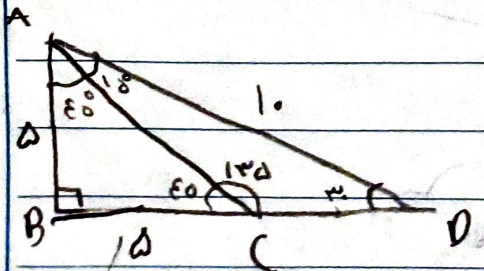
(18) ✓



$$l = r + v + l + l =$$

(31) ✓

$$r^2 + w^2 = l^2 \rightarrow w = A$$



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

(r) - 1

$$\frac{BD}{AD} = \frac{\sqrt{r}}{r} \rightarrow \frac{BD}{l} = \frac{\sqrt{r}}{r}$$

$$DC = BD = BC$$

$$BD = a\sqrt{r}$$

$$\sin \theta = \frac{1}{r} \rightarrow AB = a$$

$$a\sqrt{r} = a \checkmark$$

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✓ possible? (1)

✓ possible? (1)

$$\sin \alpha < 0$$

$$\tan \alpha = \frac{1}{2} \rightarrow \cot \alpha = 2$$

(1)

$$\cos \alpha < 0$$

$$\frac{1}{\sin^2 \alpha} = 1 + \cot^2 \alpha$$

Q.E.D.

$$\frac{1}{\sin^2 \alpha} = 1 \rightarrow \sin^2 \alpha = \frac{1}{2} \rightarrow \sin \alpha = \pm \frac{1}{\sqrt{2}}$$

$$\sin \alpha = -\frac{1}{\sqrt{2}}$$

✓