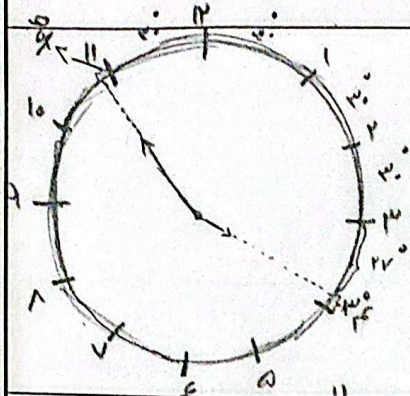


نام و نام خانوادگی نادر ایلایی پاسخنامه تشریحی تکلیف شماره ۱۹... کلاس (هم در فتر) B

(الف)

$$\frac{120}{\sqrt{2}} + 6 + 2V = 153$$



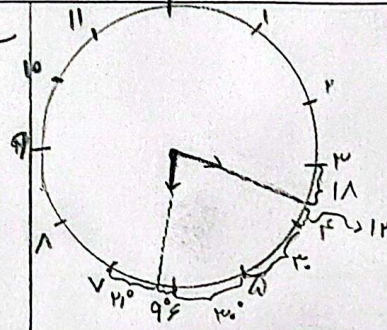
$$\left| \frac{11}{\sqrt{2}} \times \frac{2V}{\sqrt{2}} - 90 \right| = \left| 15.15M - 30H \right|$$

$$\left(\frac{19V - 90}{\sqrt{2}} \right) = 20V$$

$$340 - 20V = 153$$

$$\left| 15.15M - 30H \right| = \left| \frac{11}{\sqrt{2}} \times \frac{2V}{\sqrt{2}} - 90 \right|$$

$$\left| 99 - 110 \right| = 11^\circ$$



(الف)

$$\frac{1}{V} = 9$$

$$90 + \frac{21}{4} = 11^\circ$$

$$340 - 11 = 279$$

$$\alpha R + 2R = \frac{\pi}{\sqrt{2}} \times 4 + 6 = \frac{\pi}{\sqrt{2}} + 6$$

(الف)

$$\frac{\alpha}{V} \times R^2 = \frac{\pi}{\sqrt{2}} \times \left(\frac{4}{\sqrt{2}} \right)^2 = \frac{\pi}{\sqrt{2}} \times 8$$

(الف)

$$a = \sqrt{c^2 + b^2 - 2bc \cos A}$$

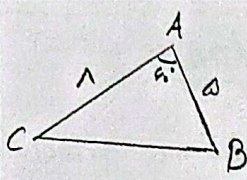
$$a = \sqrt{6^2 + 2^2 - 2 \times 6 \times 2 \times \frac{1}{2}}$$

$$a = \sqrt{19 - 12}$$

$$a = \sqrt{7}$$

$$a = \sqrt{7}$$

$$p = \frac{10}{\sqrt{2}} + 1 + 1 = 20$$



(الف)

$$\frac{a \times b \times \sin C}{2} = \frac{10}{2} \times \frac{\sqrt{3}}{2}$$

$$10\sqrt{3}$$

$$\hat{B} + \hat{C} = 150^\circ \quad A = 30^\circ = \frac{\pi}{6}$$

$$\frac{a}{\sin A} = \frac{b}{\sin B} = 30$$

$$\sin \hat{B} = \frac{b}{30} = \frac{10\sqrt{3}}{30} = \frac{\sqrt{3}}{3}$$

$$\hat{B} = 35.26^\circ \text{ or } 144.74^\circ = \frac{\pi}{6}$$

$$\hat{C} = 150^\circ - 35.26^\circ = 114.74^\circ = \frac{\sqrt{3}\pi}{12}$$

$$\frac{\tan(\pi - \alpha) + r \tan(\pi + \alpha)}{\tan(\pi - \alpha) - \tan(\pi + \alpha)} = \frac{-\tan \alpha + r \tan \alpha}{-\tan \alpha - (+\tan \alpha)} = \frac{r \tan \alpha}{-r \tan \alpha} = -\frac{r}{r} = -1$$

6

$$\frac{r \tan(\frac{\pi}{r} - \frac{\pi}{r}) + \tan(\frac{\pi}{r} + \frac{\pi}{r})}{r \tan(\pi - \frac{\pi}{r}) + \tan(\frac{\pi}{r} - \frac{\pi}{r})} = \frac{r \cot \frac{\pi}{r} + (-\cot \frac{\pi}{r})}{-r \tan \frac{\pi}{r} - \tan \frac{\pi}{r}} = \frac{\cot \frac{\pi}{r} \xrightarrow{\frac{1}{\tan \frac{\pi}{r}}} 1}{-r \tan \frac{\pi}{r}} = \frac{1}{\tan(-r \tan)} = -r \tan \frac{\pi}{r}$$

$$\frac{1}{-r(a^r)} = \boxed{\frac{1}{-r a^r}}$$

$$\tan \frac{\pi}{r} = a$$

$$\tan^r \frac{\pi}{r} = a^r$$

7

$$\frac{\sin \alpha + \cos \alpha}{\sin \alpha - \cos \alpha} + \frac{\sin \alpha - \cos \alpha}{\sin \alpha + \cos \alpha} = r$$

$$\left(\frac{\tan + 1}{\tan - 1} \right) + \left(\frac{\tan - 1}{\tan + 1} \right) = r \rightarrow \frac{(\tan + 1)^r (\tan - 1)^r}{(\tan - 1)^r (\tan + 1)^r} = (\tan + 1)(\tan - 1) = \tan^2 - 1 = r$$

$$\boxed{\tan^2 = r + 1}$$

8

$$\frac{\sin^r \alpha - r \cos^r \alpha + 1}{\sin^r \alpha + r \cos^r \alpha - 1} = r \quad \frac{\tan^r \alpha - r + 1}{\tan^r \alpha + r - 1} = \frac{\tan^r \alpha - 1}{\tan^r \alpha + 1} = \frac{\sin^r \alpha \cos^r \alpha}{\frac{1}{\cos^r \alpha}} = \sin^r \alpha \cos^r \alpha = r$$

9

$$\left. \begin{array}{l} \sin^r \alpha - \cos^r \alpha = r \\ \sin^r \alpha + \cos^r \alpha = 1 \end{array} \right\} \Rightarrow r \sin^r \alpha = a \quad \sin^r \alpha = \frac{a}{r} \quad \cos^r \alpha = -\frac{r}{r}$$

$$\tan^r \alpha = \frac{\left(\frac{a}{r} \right)}{\left(-\frac{r}{r} \right)} = \boxed{-\frac{a}{r}}$$

$$\text{ii) } \frac{1 + \cos 2\omega}{r} = \cos 2\omega = \frac{1 + \sqrt{\frac{r + \sqrt{r}}{r}}}{r} = \sqrt{\frac{r + \sqrt{r}}{r}}$$

10

$$\text{iii) } \frac{1 - \cos 2\omega}{r} = \sin 2\omega = \frac{1 - \sqrt{\frac{r + \sqrt{r}}{r}}}{r} = \sqrt{\frac{r + \sqrt{r}}{r}}$$