نام و نام خانوادگی ... پارسا اکبری ... پاسخنامه تشریحی تکلیف شماره ۱ ... کلاس دهم ... ۱۹٫۷۵

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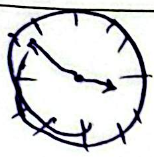
ب) $|15{,}5M - 30H|$

$\Rightarrow 5{,}5 \times 54 - 30 \times 3 = 207$

$360 - 207 = 153^\circ$ ✓

الف)



$4 \times 30 = 120$

$\frac{1}{2} \times 54 = 27$

$120 + 27 + 6 = 153$ ✓

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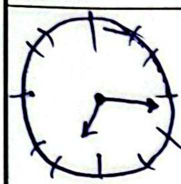
ب) $|5{,}5 \times 18 - 30 \times 6|$

$= 81^\circ$ ✓

الف)



$2 \times 30 = 60$

$2 \times 6 = 12$

$18 \times \frac{1}{2} = 9$

$60 + 12 + 9 = 81$ ✓

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الف) $S = \frac{\pi}{6} \times \frac{1}{2} \times 9 = \frac{9\pi}{12}$ ✓

ب) $3 + 3 + \frac{\pi}{6} \times 3 = 6 + \frac{\pi}{2}$ ✓

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$BC = \sqrt{25 + 64 - 80 \times \cos 60} = \sqrt{49} = 7$

الف) $\frac{5 \times 8 \times \frac{\sqrt{3}}{2}}{2} = S = 10\sqrt{3}$ ✓

ب) محیط $= 7 + 5 + 8 = 20$ ✓

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$\frac{15}{\sin A} = \frac{15\sqrt{2}}{\sin B} = \frac{AB}{\sin C} \Rightarrow \frac{15}{\frac{1}{2}} = 30 = \frac{15\sqrt{2}}{\frac{\sqrt{2}}{2}} \Rightarrow B = 45^\circ \quad C = 105$

$\frac{7\pi}{12}$ و $\frac{\pi}{6}$ و $\frac{\pi}{4}$ ✓

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۶

$$\frac{-\tan\alpha + 2\tan\alpha}{-\tan\alpha - \tan\alpha} = \frac{\tan\alpha}{-2\tan\alpha} = -\frac{1}{2} \checkmark$$

(۲)

۷

$$\frac{2\tan\left(\frac{\pi}{2}-\frac{\pi}{12}\right)+\tan\left(\frac{\pi}{2}+\frac{\pi}{12}\right)}{2\tan\left(\frac{\pi}{2}-\frac{\pi}{12}\right)+\tan\left(\frac{\pi}{2}+\frac{\pi}{12}\right)} = \frac{2a-\frac{1}{a}}{-2a-\frac{1}{a}} = \frac{-1}{2a^2+1}$$

۱٫۷۵

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$$\frac{\sin^2\alpha+\cos^2\alpha+2\sin\alpha\cos\alpha+\sin^2\alpha-\cos^2\alpha-2\sin\alpha\cos\alpha}{\sin^2\alpha-\cos^2\alpha} = \frac{2}{\sin^2\alpha-\cos^2\alpha} = 2$$

$$1+\tan^2\alpha = \frac{1}{\cos^2\alpha} \Rightarrow \tan^2\alpha = 4 \checkmark$$

(۲)

۹

$$4\sin^2\alpha+4\cos^2\alpha-4 = 3\sin^2\alpha-2\cos\alpha+1$$

$$2\sin^2\alpha+2\cos^2\alpha+\cos^2\alpha = 4 \Rightarrow \cos^2\alpha = \frac{2}{7} \Rightarrow 1+\tan^2\alpha = \frac{1}{\cos^2\alpha}$$

$$\Rightarrow \tan^2 = \frac{5}{2} \checkmark$$

(۲)

۱۰

$$\cos(11/25) = \sqrt{\frac{1+\cos 45}{2}} = \frac{1+\frac{\sqrt{2}}{2}}{2} = \frac{\sqrt{2+\sqrt{2}}}{2} \checkmark$$

$$\sin(67/5) = \sqrt{\frac{1-\cos 135}{2}} = \sqrt{\frac{1+\frac{\sqrt{2}}{2}}{2}} = \frac{\sqrt{2-\sqrt{2}}}{2} \checkmark$$

(۲)