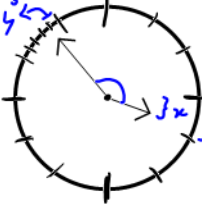


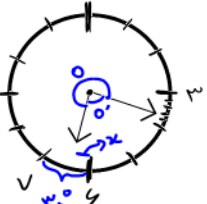
نام و نام خانوادگی ..... علی جنتیپایان ..... پاسخنامه تشریحی تکلیف شماره ۱۹ ..... کلاس ..... پسر

۱۷، ۷۵

الف)   $\frac{x}{3.5} = \frac{54}{6} \Rightarrow x = 27^\circ \Rightarrow \text{زاویه} = 27^\circ + 4 \times 3.5^\circ + 6^\circ = 153^\circ \checkmark$

(۲)  
۱

ب)  $|2.5m - 3.h| = 2.5 \times 54 - 3 \times 3 = 297 - 9 = 288^\circ \rightarrow \text{زاویه خارجی}$   
 $360 - 288 = 72^\circ \rightarrow \text{زاویه داخلی} \checkmark$

الف)   $\frac{18^\circ}{6.5} = \frac{x}{3.5} \Rightarrow x = 9^\circ \Rightarrow \text{زاویه داخلی} = 9^\circ + 3.5 \times 2 + 2 \times 6^\circ = 11^\circ$   
 $360 - 11 = 349^\circ \rightarrow \text{زاویه خارجی} \checkmark$

(۲)  
۲

ب)  $|0.5m - 3.h| = 0.5 \times 18^\circ - 3 \times 6^\circ = |9^\circ - 18^\circ| = 9^\circ \rightarrow \text{زاویه داخلی} \checkmark$   
 $360 - 9 = 351^\circ \rightarrow \text{زاویه خارجی} \checkmark$

الف)  $S = R^2 \times \frac{1}{r} \times \hat{O} = 3^2 \times \frac{1}{r} \times \frac{\pi}{6} = \frac{9\pi}{12} = \frac{3\pi}{4} \checkmark$

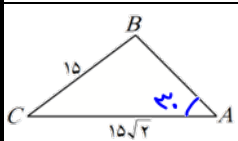
(۲)  
۳

ب)  $\text{محیط} = \widehat{AB} + OB + OA = (R \times \hat{O}) + r + r = (3 \times \frac{\pi}{6}) + 3 + 3 = \frac{12 + \pi}{2} \checkmark$

الف)  $S = \sin \hat{A} \times \frac{1}{r} \times AB \times AC = \sin 60^\circ \times \frac{1}{r} \times 8 \times 4 = \frac{\sqrt{3}}{2} \times 40 = 10\sqrt{3} \checkmark$

(۲)  
۴

ب)  $BC = \sqrt{2^2 + 1^2 - 2 \times 2 \times 1 \times \cos 90^\circ} = \sqrt{2 + 1 - 0} = \sqrt{3} = 1$   
 $\Rightarrow \text{محیط} = 2 + 1 + 1 = 4 \checkmark$



$\hat{B} + \hat{C} = 150^\circ \Rightarrow \hat{A} = 180^\circ - 150^\circ = 30^\circ \rightarrow \frac{\sin 30^\circ}{15} = \frac{\sin \hat{B}}{15\sqrt{2}} \Rightarrow \sin \hat{B} = \frac{1}{\sqrt{2}} \times \frac{1}{2} = \frac{\sqrt{2}}{2}$   
 $\Rightarrow \hat{B} = 45^\circ \Rightarrow \hat{C} = 180^\circ - (30^\circ + 45^\circ) = 105^\circ$

(۲)  
۵

$\rightarrow \hat{C} = 105^\circ = \frac{7\pi}{4}, \hat{B} = 45^\circ = \frac{\pi}{4} \checkmark$

دقت!

$$\frac{\tan(\pi - \alpha) + 3 \tan(\pi + \alpha)}{\tan(2\pi - \alpha) - \tan(2\pi + \alpha)} = \frac{-\tan(\alpha) + 3 \tan(\alpha)}{-\tan(\alpha) - \tan(\alpha)} = \frac{2 \tan(\alpha)}{-2 \tan(\alpha)} = -1 \quad \checkmark$$

(2)

6

$$\frac{\pi}{12} = 15^\circ \quad \frac{2 \tan 45^\circ + \tan 15^\circ}{2 \tan 15^\circ - \tan 45^\circ} = \frac{2 \times \tan(\frac{\pi}{4} - \frac{\pi}{12}) + \tan(\frac{\pi}{4} + \frac{\pi}{12})}{2 \times \tan(\pi - \frac{\pi}{12}) - \tan(\frac{\pi}{4} - \frac{\pi}{12})} = \frac{2 \cot(\frac{\pi}{12}) - \cot(\frac{\pi}{12})}{-2 \tan(\frac{\pi}{12}) - \cot(\frac{\pi}{12})} \quad \checkmark$$

$$\cot(\frac{\pi}{12}) = \frac{1}{a} \Rightarrow \frac{\frac{1}{a} - \frac{1}{a}}{-\frac{1}{a} - \frac{1}{a}} = \frac{1}{a} \times \frac{a}{-\frac{1}{a}} = -1 \quad \boxed{\frac{-1}{2a^2 + 1}}$$

7

$$\frac{\sin x + \cos x}{\sin x - \cos x} + \frac{\sin x - \cos x}{\sin x + \cos x} = 3 = \frac{\sin^2 x + 2 \sin x \cos x + \cos^2 x + \sin^2 x - 2 \sin x \cos x + \cos^2 x}{\sin^2 x - \cos^2 x} = \frac{2 \sin^2 x + 2 \cos^2 x}{\sin^2 x - \cos^2 x}$$

$$= \frac{2}{\sin^2 x - \cos^2 x} = 3 \Rightarrow \sin^2 x - \cos^2 x = \frac{2}{3} \Rightarrow 1 - 2 \cos^2 x = \frac{2}{3} \Rightarrow 2 \cos^2 x = \frac{1}{3} \Rightarrow \cos x = \frac{\sqrt{3}}{4}$$

$$\frac{1}{\cos^2 x} = 1 + \tan^2 x \Rightarrow \tan^2 x = 2 \quad \checkmark$$

(2)

8

$$\frac{\sin^2 x - 2 \cos^2 x + 1}{\sin^2 x + 2 \cos^2 x - 1} = 4 \rightarrow \frac{1 - 2 \cos^2 x + 1}{1 + \cos^2 x - 1} = 4 \Rightarrow \frac{2 - 2 \cos^2 x}{\cos^2 x} = \frac{2 \sin^2 x - \cos^2 x}{\cos^2 x} = 2 \tan^2 x - 1 = 4$$

$$\Rightarrow \tan^2 x = 2.5 \quad \checkmark$$

(2)

9

$$\text{الف) } \frac{1 - \cos(2 \times 22.5^\circ)}{2} = \sin^2 22.5^\circ \Rightarrow \sin^2 22.5^\circ = \frac{1 - \sqrt{2}}{2} \Rightarrow \sin 22.5^\circ = \pm \frac{\sqrt{2 - \sqrt{2}}}{2}$$

$$\text{جوابه سوال : } \cos 22.5^\circ \rightarrow \frac{\sqrt{2 + \sqrt{2}}}{2}$$

$$1 \Rightarrow \sin 22.5^\circ = \frac{\sqrt{2 - \sqrt{2}}}{2}$$

$$\text{ب) } 22.5^\circ + 22.5^\circ = 45^\circ \Rightarrow \sin 22.5^\circ = \cos 45^\circ = \frac{\sqrt{2 - \sqrt{2}}}{2}$$

$$\text{جوابه سوال : } \sin 45^\circ \rightarrow \frac{\sqrt{2 + \sqrt{2}}}{2}$$

دقت!

0

10