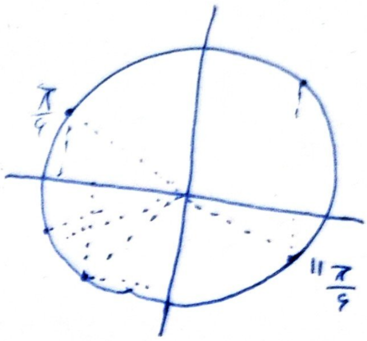
تصحیح سطحا:

(۱)

$$\frac{a\sin\frac{4\pi}{3}+b\cos\frac{7\pi}{6}}{a\sin\frac{11\pi}{6}+b\cos\frac{\pi}{6}}=\tan\frac{5\pi}{6}$$

($\sin\frac{4\pi}{3}=-\frac{\sqrt{3}}{2}$ ، $\cos\frac{7\pi}{6}=-\frac{\sqrt{3}}{2}$ ، $a\frac{1}{2}$ ، $\frac{1}{2}$)



$$\frac{(a+b)}{\frac{1}{2}(b-a)}=-\frac{\sqrt{3}}{3}\times\frac{1}{2}\times\frac{2}{-\sqrt{3}}$$

$$\frac{a+b}{-a+b}=\frac{1}{3}$$

$$3a+3b=-a+b \longrightarrow 4a=-2b$$

$$(-2)=\frac{4}{-2}=\frac{b}{a}$$

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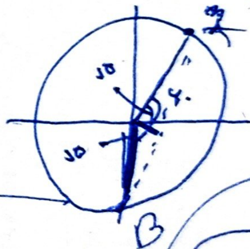
(۲)

$$\cos=\frac{1}{2}\longrightarrow \alpha=60 \text{ درجه}$$



$$\cos 150=-\frac{\sqrt{3}}{2}$$

فاصله سر عقربه ها $=AB=\sqrt{1^2+1^2-2\times1\times1\times-\frac{\sqrt{3}}{2}}=\sqrt{2+\frac{\sqrt{3}}{2}}$

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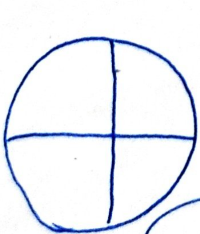
(۳)



$$\frac{\pi}{9}\times\frac{180}{\pi}=20 \text{ درجه}$$

$$\frac{360}{12}=30$$

1h	۳۰ درجه
۴۰ min	۲۰ درجه

۲:۴۰

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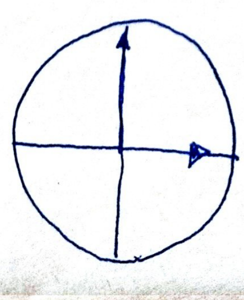
(۴)



1min ⟶ ساعت شمار ⟶ ۰/۵ درجه

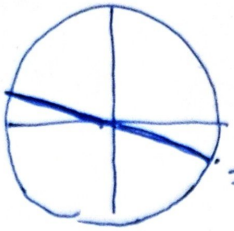
1min ⟶ دقیقه شمار ⟶ ۶ درجه

اختلاف کنونی = ۹۰ درجه

۹۰+۲۰ = ۱۱۰ درجه

سرعت $5{,}5t=110$ = ۲۰ min

(٥)



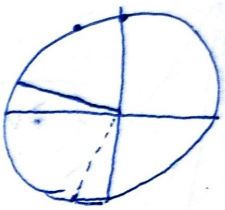
$-\frac{1}{2} < \frac{m-5}{5} \leq 1$

$-5 < 2m - 9 \leq 10$

$1 < 2m \leq 19$ → $0.5 < m \leq 9.5$

(٦)

$\tan\alpha = 0.75$ → $\sin = \frac{3}{5}$, $\cos = 1$

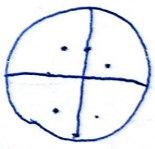


$$\frac{1 + -\frac{k}{5}}{-1 + -\frac{1}{2}} = 3 \rightarrow 1 - \frac{k}{5} = -\frac{9}{5}$$

$$\frac{-k}{5} = \frac{-15}{5} \rightarrow k = 15$$

(٧)

$$\frac{+\cot(\alpha) + \cot(\alpha)}{\tan\alpha + -2\tan(\alpha)} = \frac{2\cot(\alpha)}{-\tan(\alpha)}$$



(١)

$3 \times 1.1 \times \frac{\pi}{10} = \frac{3\pi}{5}$

$2\pi r$	αr
πr^2	$\frac{\alpha}{2} r^2$

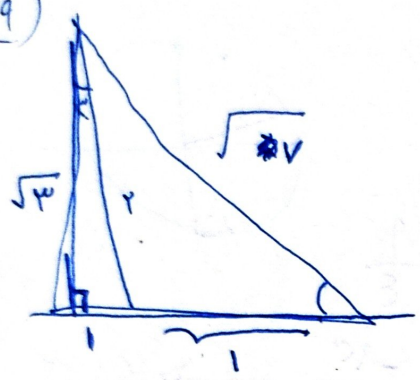
$\frac{S_A}{S_B} = \left(\frac{3}{2}\right)^2 = \frac{9}{4}$

9π

$\frac{3\pi}{10} r_A = \frac{9\pi}{20} r_B$

$\frac{r_A}{r_B} = \frac{9}{6} = \frac{3}{2}$

⑨



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

$\sin 2C = 2\sin\cos C$

$2 \times \frac{\sqrt{2}}{\sqrt{7}} \times \frac{2}{\sqrt{7}} = \frac{4\sqrt{2}}{\sqrt{49}} = \frac{4\sqrt{2}}{7}$

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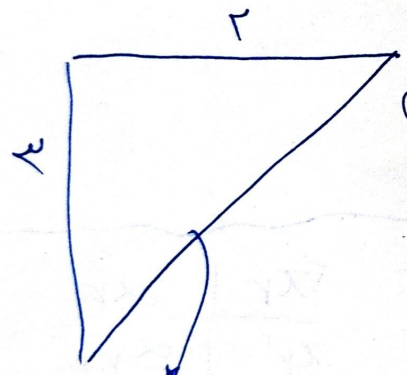
⑩



$\frac{8}{\sin} = 9$

$\frac{3}{2} + C + \frac{1}{C} = \frac{13}{2}$

$\frac{11}{C} - \frac{13}{C} = \frac{5}{2} \longrightarrow \frac{1}{2}\sin\alpha\sqrt{13}\times\sqrt{13} = \frac{5}{8}$

$8\sin = \frac{5}{13}$