

$$\frac{-\frac{\sqrt{3}}{2}a - \frac{\sqrt{3}}{2}b}{-\frac{1}{2}a + \frac{1}{2}b} = -\frac{\sqrt{3}}{3} \quad \frac{-\frac{\sqrt{3}}{2}(a+b)}{-\frac{1}{2}(a-b)} = -\frac{\sqrt{3}}{3} \quad -\frac{1}{3}a + \frac{1}{3}b = a+b \quad \frac{4}{3}a = -\frac{2}{3}b \quad b = -2a \rightarrow \frac{b}{a} = -2 \quad (1)$$

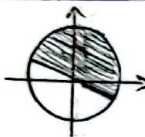
$$P = 90^\circ \rightarrow P' = 2V_0 \quad PP' = OP' + OP'' - 2OP \cdot OP' \cdot \frac{\cos \alpha}{\cos 120^\circ} \quad PP' = 1+1 - 2 \times (-\frac{\sqrt{3}}{2}) = 2+\sqrt{3} \quad (2)$$

$$2P_{opp} = 1+1+\sqrt{2+\sqrt{3}}$$

$$\frac{\pi}{9} = 20^\circ \quad (3)$$

اندازه ای که عقرب ساعت شمار می رود جلو نصف دقیقه است پس ۲:۴۰ است.

$$\alpha = \left| \frac{11M}{P} - 90H \right| \quad \frac{11M}{P} - 90 = \pm 20 \quad \begin{cases} M_1 = 12, V \\ M_2 = 20 \end{cases} \rightarrow \text{جواب} \quad (4)$$

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$$-\frac{1}{P} < \sin \alpha \leq 1 \quad -\frac{1}{P} < \frac{m-3}{a} \leq 1 \quad -\frac{a}{P} < m-3 \leq a \quad \frac{1}{P} < m \leq a \quad (5)$$

$$\frac{\cos 120^\circ - K \sin 120^\circ}{-\cos 120^\circ - P \sin 120^\circ} \cdot \frac{\sin 120^\circ = 1}{\cos 120^\circ = F} \rightarrow \frac{F-K}{-F-P} = 3 \quad F-K = -12 \quad K = 22 \quad (6)$$

$$P + P \cos \alpha = 1 - \cos \alpha \quad P \cos \alpha = -1 \quad \cos \alpha = -\frac{1}{P} \quad \frac{3}{\sqrt{3}} \rightarrow \sin \alpha = \frac{2\sqrt{3}}{P} \quad (7)$$

$$\frac{\cot \alpha + \cot \alpha}{\tan \alpha - P \tan \alpha} = \frac{P \cot \alpha}{- \tan \alpha} = \frac{-\frac{2\sqrt{3}}{P}}{\frac{F}{2\sqrt{3}}} = -\frac{1}{F}$$

$$108^\circ = \frac{3\pi}{2} \quad \frac{3\pi}{2} \times R_A = \frac{9\pi}{10} \times R_B \quad \frac{R_A}{R_B} = \frac{3}{2} \quad \frac{S_A}{S_B} = \frac{\frac{3}{2} R_A^2}{\frac{3}{2} R_B^2} = \frac{9}{4} \quad (8)$$

$$AB = \sqrt{3} \quad S = \frac{AB \times BC}{2} = \frac{\sqrt{3} \times BC}{2} = \sqrt{3} \quad BC = 2 \quad AC = \sqrt{2^2 + \sqrt{3}^2} = \sqrt{7} \quad (9)$$

$$\sin C = \frac{AB}{AC} = \frac{\sqrt{3}}{\sqrt{7}} \quad \cos C = \frac{BC}{AC} = \frac{2}{\sqrt{7}} \quad \sin 2C = 2 \sin C \cdot \cos C = 2 \times \frac{\sqrt{3}}{\sqrt{7}} \times \frac{2}{\sqrt{7}} = \frac{4\sqrt{3}}{7}$$

$$AM = AN = \sqrt{13} \quad MN = \sqrt{2} \quad MN^2 = AM^2 + AN^2 - 2AM \cdot AN \cdot \cos \theta \quad (10)$$

$$2 = 13 + 13 - 2 \times 13 \times \cos \theta \quad \cos \theta = \frac{12}{13} \rightarrow \sin \theta = \frac{5}{13}$$