



$$a_n = \sqrt{n} - \sqrt{n+1} \quad \left\{ \begin{array}{l} a_1 = \sqrt{1} - \sqrt{2} \\ a_2 = \sqrt{2} - \sqrt{3} \\ \vdots \\ a_{23} = \sqrt{23} - \sqrt{24} \\ a_{24} = \sqrt{24} - \sqrt{25} \\ \hline S_{24} = \sqrt{1} - \sqrt{25} = \boxed{-4} \end{array} \right. \quad \begin{array}{l} - 1 \\ \text{حل:} \end{array}$$

$$5, x, 13, y \rightarrow \begin{cases} a_1 = 5 \\ a_r = 13 \rightarrow a_1 + 2d = 13 \rightarrow 5 + 2d = 13 \rightarrow \boxed{d = 4} \end{cases} \quad \begin{array}{l} - 2 \\ \text{حل:} \end{array}$$

بنابراین:  $5, 9, 13, 17$        $x - y = 9 - 17 = \boxed{-8}$

$$d = \frac{b-a}{m+1} \rightarrow d = \frac{55-7}{7+1} = 6 \quad \begin{array}{l} - 3 \\ \text{حل:} \end{array}$$

جمله وسط  $a_0 = 7 + 4 + (6) = \boxed{31}$        $7, 13, 19, \dots$

$$q^{r+1} = \frac{324}{4} \rightarrow q^r = 81 \rightarrow \boxed{q = 3} \quad \begin{array}{l} - 4 \\ \text{حل:} \end{array}$$

$4, 12, 36, 108, 324$

$$A = \left(\frac{1}{2}\right)^2 + \frac{1}{2} - 1 = \boxed{-\frac{1}{4}} \quad \begin{array}{l} - 5 \\ \text{حل: (ریاضی را دوست دارم)} \end{array}$$

$$\cos x = \sin 30^\circ \times \cos 60^\circ + \sin 60^\circ \times \cos 30^\circ \quad \begin{array}{l} - 6 \\ \text{حل:} \end{array}$$

$$\cos x = \frac{1}{2} \times \frac{1}{2} + \frac{\sqrt{3}}{2} + \frac{\sqrt{3}}{2} \rightarrow \cos x = 1 \quad x = 0^\circ$$

$$\sin 30^\circ = \frac{AH}{AC} \rightarrow \frac{1}{2} = \frac{AH}{12\sqrt{3}} \rightarrow \boxed{AH = 6\sqrt{3}} \quad - 7$$

$$\sin 60^\circ = \frac{AH}{y} \rightarrow \frac{\sqrt{3}}{2} = \frac{6\sqrt{3}}{y} \rightarrow \boxed{y = 12} \quad \text{حل:}$$

$$\cos 60^\circ = \frac{x}{y} \rightarrow \frac{1}{2} = \frac{x}{12} \rightarrow \boxed{x = 6} \quad x + y = \boxed{18}$$

$$S = \frac{1}{2} ab \sin \theta \rightarrow 33\sqrt{2} = \frac{1}{2} \times 6 \times 22 \times \sin \theta \rightarrow \sin \theta = \frac{\sqrt{2}}{2} \rightarrow \boxed{\theta = 45^\circ} \quad \text{حل:}$$

$$A = \begin{pmatrix} 3 \\ -1 \end{pmatrix} \quad m = \tan \theta = \tan 45^\circ \rightarrow \boxed{m = 1} \quad - 9$$

$$y - y_A = m(x - x_A) \rightarrow y + 1 = 1(x - 3) \rightarrow \boxed{y = x - 4} \quad \text{حل:}$$

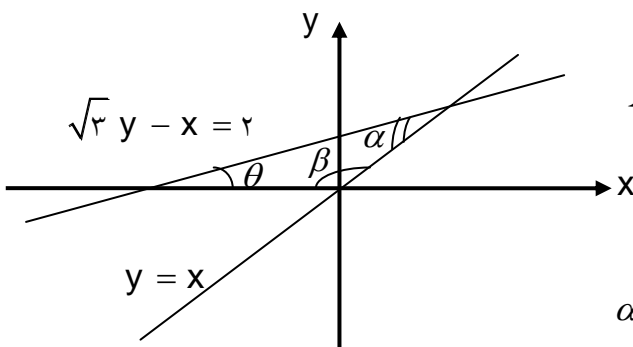
$$\text{حکم: } \frac{\tan \theta}{1 + \tan^2 \theta} = \sin \theta \times \cos \theta \quad - 10$$

$$\text{طرف چپ: } \frac{\tan \theta}{1 + \tan^2 \theta} = \frac{\frac{\sin \theta}{\cos \theta}}{1 + \frac{\sin^2 \theta}{\cos^2 \theta}} = \frac{\frac{\sin \theta}{\cos \theta}}{\frac{\sin^2 \theta + \cos^2 \theta}{\cos^2 \theta}} = \frac{\sin \theta \times \cos \theta}{1} = \sin \theta \times \cos \theta \quad \text{حل:}$$

$$B = 4 \sin^2 15^\circ - 3 \tan^2 30^\circ + 4 \sin^2 75^\circ \quad - 11$$

$$\rightarrow B = 4(\sin^2 15^\circ + \sin^2 75^\circ) - 3\left(\frac{\sqrt{3}}{3}\right)^2$$

$$\Rightarrow B = 4(\sin^2 15^\circ + \cos^2 15^\circ) - 1 = 4(1) - 1 = \boxed{3} \quad \text{حل:}$$



$$\text{اگر } \sqrt{3}y - x = 2 \rightarrow \tan \theta = -\frac{-1}{\sqrt{3}} \rightarrow \theta = 30^\circ$$

$$\beta = 180^\circ - 45 \rightarrow \beta = 135^\circ$$

$$\alpha = 180 - (\theta + \beta) \rightarrow \alpha = 180^\circ - (30 + 135) = 15^\circ$$

دانلود نمونه سوال ، آموزش ریاضی، تدریس فصولی از سایت ریاضی ما

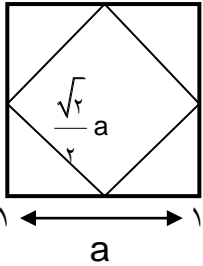
$$y = |5 \sin x - 9|$$

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حل:

$$-1 \leq \sin x \leq 1 \rightarrow -5 \leq 5 \sin x \leq 5 \rightarrow -14 \leq 5 \sin x - 9 \leq -4$$

$$\Rightarrow 4 \leq |5 \sin x - 9| \leq 14 \rightarrow \begin{cases} y_{\max} = 14 \\ y_{\min} = 4 \end{cases}$$



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$$A_1 = a^2$$

$$A_2 = \left(\frac{\sqrt{2}}{2} a\right)^2 \rightarrow A_2 = \frac{1}{2} a^2$$

⋮

$$q = \frac{A_2}{A_1} = \frac{\frac{1}{2} a^2}{a^2} = \frac{1}{2}$$

$$S_n = \frac{A_1}{1-q} = \frac{a^2}{1-\frac{1}{2}} = 2a^2$$

$n \rightarrow +\infty$

مرکز ریاضیات ویژن



به ریاضی عمیق تر نگاه کن

مرکز تخصصی ریاضیات ویژن



کلاسهای ریاضی تیزهوشان ویژن

دانلود نمونه سوال ، آموزش ریاضی، تدریس فصولی از سایت ریاضی ها