



Year:

Month:

Day:

| |

Subject:

19, 19



A positive value

$$\frac{\Delta a}{a} = \frac{\Delta a}{a} \rightarrow S_1, r, a^r$$

(1)

$$\frac{r}{a} = \frac{r}{a} \rightarrow \frac{l}{r} = \frac{\sqrt{a+1}}{r} \rightarrow l = r a (\sqrt{a+1})$$

$$\Rightarrow S_r = r a^r (\sqrt{a+1})$$

(5)

$$\rightarrow \frac{S_r}{S_1} = \frac{r a^r (\sqrt{a+1})}{a^r} = \frac{r}{a} (\sqrt{a+1})$$

then $x = 1$

$$\frac{1}{a} = \sqrt{a^2 + y^2} \rightarrow \frac{\sqrt{a^2 + y^2}}{y} = \frac{\sqrt{a+1}}{r} \rightarrow \frac{1}{a} = \frac{\sqrt{a+1}}{r}$$

$$\frac{a^2 + y^2}{y^2} = \frac{r^2 + a^2}{r^2} \rightarrow r^2 + a^2 = r^2 y^2 + y^2 a^2$$

(5)

$$\rightarrow r^2 + a^2 = r^2 y^2 + y^2 a^2 \rightarrow y^2 (1 + a^2) = r^2 (1 + a^2) \rightarrow y = r$$

$$\rightarrow \frac{y^2}{a^2} = \frac{y^2}{r^2 (1 + a^2)} = \frac{1}{1 + a^2}$$

$$r a + \sqrt{r a^2 + \epsilon a} = r \rightarrow \sqrt{r a^2 + \epsilon a} = r - r a = r(1 - a)$$

(14)

$$r a^2 + \epsilon a = \epsilon + 9 a^2 - 12 a \rightarrow 5 a^2 - 12 a + \epsilon = 0$$

(5)

$$\rightarrow a^2 - 12 a + 2 \epsilon = (a - 12)(a - 2) \rightarrow a = 12$$

$$* : y + \sqrt{y^2 + \epsilon} \neq r$$

$$\rightarrow \frac{r_{1/2} + 1}{r_{1/2}} = 9/2 = \frac{\epsilon}{10}$$



Year:

Month:

Day:

| |

Subject:



$$\frac{\sqrt{x+1}}{\sqrt{x-1}e^x} - \frac{\sqrt{x+1}}{e-\sqrt{x-1}} \leq \frac{\sqrt{x+1} - \sqrt{x^2-1} - \sqrt{x^2-1} + \sqrt{x+1}}{9-x+1 \cdot 10-x}$$

(۴)

نتیجه

$$\rightarrow \frac{-2\sqrt{x^2-1}}{10-x} \leq \frac{x-1}{\sqrt{x-1}} \rightarrow (x/1)(10-x) \leq -2(x-1)(\sqrt{x+1})$$

(۷۵)

$$\rightarrow 10-x \leq -2\sqrt{x+1} \quad \text{مربع می‌کنیم} \quad 100+x^2-20x \leq 4x+4$$

$$\rightarrow x^2-24x+96 \leq 0 \quad \rightarrow 6^2-24x+96 \leq 0 \quad \rightarrow 192-24x \leq 0$$

۱. اگر x پس $4 \leq x \leq 12$ غیر قابل قبول می‌باشد، تنها ارزش مثبت دارد.

$$\rightarrow x \leq \frac{24 \pm \sqrt{24^2-4 \cdot 96}}{2} \leq 12 \pm 8 \quad \text{مربع می‌کنیم}$$

$$\sqrt{2-x} \leq t^* \rightarrow \frac{1}{t+2} - \frac{1}{2-t} \leq \frac{t}{\omega} \leq \frac{2-t-t-2}{4-t^2} \leq \frac{t}{\omega}$$

(۱۵)

$$\rightarrow -10 \leq 4-t^2 \rightarrow t^2-4-10 \leq 0 \quad \rightarrow t^2-14 \leq 0 \rightarrow t \leq \sqrt{14}$$

مربع می‌کنیم مثبت نداریم.

$$-10 \leq 4-t^2 \rightarrow t^2-4-10 \leq 0 \rightarrow t^2-14 \leq 0 \rightarrow t \leq \sqrt{14}$$

(۱۷)

$$\begin{array}{c|c|c|c} -\infty & 4 & \infty \\ \hline + & - & + & - \end{array} \rightarrow (-\infty, -5] \cup [4, \infty) *$$

$$\text{نیز در سوال دوم: } -(x^2-4x+8) \leq -(x-2)(x-4) \rightarrow \frac{2}{-} \frac{4}{+} \rightarrow [2, 4] *$$

استدلال بن x و x هر دو 4 من قبیل $x = 4$ صدق می‌کنند $\rightarrow$ جواب

$$\sqrt{4} + \sqrt{0} + \sqrt{4} + \sqrt{0} \leq 4 \quad \checkmark$$



Year:

Month:

Day:

| |

Subject:



$$y \leq |x+2| + |x-1| \quad (\text{تابع مطلق}) \rightarrow \begin{cases} x+3 & x \geq 1 \end{cases} \quad (1)$$

$$\textcircled{2}: 3y + x \leq 14 \rightarrow y \leq \frac{14-x}{3} \quad \begin{cases} 3 & -2 < x < 1 \\ -x-1 & x \leq -2 \end{cases} \quad (2)$$

(3)

$$\rightarrow x+3 \leq \frac{14-x}{3} \rightarrow 3x+9 \leq 14-x \rightarrow x \leq 2.5$$

$$y \leq 5$$

$$\rightarrow -x-1 \leq \frac{14-x}{3} \rightarrow -3x-3 \leq 14-x \rightarrow x \leq -8$$

$$y \leq 7$$

$$* \rightarrow 3 \leq \frac{14-x}{3} \rightarrow 14-x \leq 9 \rightarrow x \leq 5 \quad \text{نقطه } (-2, 1) \text{ است}$$

$$\Rightarrow A(2, 5), B(-2, 1) \rightarrow AB = \sqrt{4^2 + 4^2} = 4\sqrt{2}$$

$$\sqrt{2^2 - 4x + 4} \leq \sqrt{(x-2)^2} \leq |x-2|$$

$$y \leq \frac{1}{2}x + 2$$

$$\rightarrow \frac{1}{2}x + 2 \leq x - 2 \rightarrow x \geq 8, y \leq 4$$

$$\rightarrow \frac{1}{2}x + 2 \leq -x + 2 \rightarrow x \leq 0, y \leq 2$$

$$\text{درمیان: } \begin{vmatrix} 0 & 2 & 1 \\ 2 & 0 & 1 \\ 8 & 4 & 1 \end{vmatrix} \rightarrow S = \frac{1}{2} (0 + 14 + 14 - 0 - 0 - 4) = 12$$

مجموع B

$$\rightarrow \frac{1}{B} + \frac{1}{B+9} \leq \frac{1}{2} \rightarrow \frac{2B+9}{B^2+9B} \leq \frac{1}{2}$$

فرهاد: B, 9

$$\rightarrow 2B+18 \leq B^2+9B \rightarrow B^2-34B-18 \leq 0 \rightarrow (B-34)(B+4)$$

B-34



34 و 34 ساعت به تنهایی می‌توانند کار کنند



Year:

Month:

Day: $(x^2 - 2) + 1$

Subject:



$$\frac{1}{x^2} + \frac{1}{(x+1)^2} = \frac{14}{9} \rightarrow \frac{x^2 - x + 1}{x^2(x+1)^2} = \frac{14}{9} \quad (x-1)^2 \text{ and } (1-x)^2 \times 14$$

$$[x(x-1)]^2 = (x^2 - x)^2$$

$$t \rightarrow \frac{t^2 + 1}{t^2} = \frac{14}{9} \rightarrow 14t^2 = 18t + 9 \rightarrow 14t^2 - 18t - 9 = 0$$

$$b^2 - 4ac = 324 - (-874) = 1200$$

$$t = \frac{18 \pm \sqrt{1200}}{28} \rightarrow -0.114 \text{ and } 1.1875 \quad (1)$$

$$\rightarrow x^2 - x + (0.114 / -1.1875) = 0 \rightarrow S = -b/a = 1$$

$$\Rightarrow x(1) = 1$$

• $\frac{1}{x^2} = 1$