

$$(1) \frac{n}{y} = \frac{a}{r} \Rightarrow y = \frac{rx}{a} \Rightarrow \frac{S_1}{r} = \frac{rx}{a} \Rightarrow n = \frac{rx}{a}$$

$$\frac{n+a}{y} = \frac{a(n+a)}{rx} = \frac{\sqrt{a}+1}{r} = \frac{(\sqrt{a}+1) \cdot rx}{a} \Rightarrow \frac{S_2}{r} = \frac{(\sqrt{a}+1)rx}{a}$$

$$\Rightarrow \frac{S_2}{S_1} = \frac{(\sqrt{a}+1)}{a}$$

$$(2) \sqrt{x^2+y^2} = \text{نیم قطر} \Rightarrow \frac{\sqrt{x^2+y^2}}{x} = \frac{\sqrt{a}+1}{2} \Rightarrow \frac{x^2+y^2}{x^2} = \frac{1+\sqrt{a}}{2}$$

$$\Rightarrow 1 + \frac{y^2}{x^2} = \frac{1+\sqrt{a}}{2} \Rightarrow \frac{y^2}{x^2} = \frac{1+\sqrt{a}}{2} \Rightarrow \frac{x^2}{y^2} = \frac{2}{1+\sqrt{a}}$$

$$(3) (3a-2) = -\sqrt{2a^2+4a} \Rightarrow (3a-2)^2 = 2a^2+4a$$

$$9a^2-12a+4 = 2a^2+4a \Rightarrow 7a^2-16a+4=0$$

$$\Rightarrow a = \frac{2}{7}, \text{ و } (2) \text{ غلط است}$$

عبارت را در مخرج

$$\Rightarrow -2\sqrt{n-1} \sqrt{n+1} = \sqrt{n-1} (1-n)$$

مشترک را ضرب کنیم

$$2\sqrt{n+1} = n-1 \Rightarrow 4n+4 = n^2-2n+1 \Rightarrow n^2-6n-3=0$$

$$n^2-6n-3=0 \Rightarrow n = \frac{6 \pm \sqrt{36+12}}{2} \Rightarrow 12-4\sqrt{3} \text{ و } 12+4\sqrt{3}$$

هر دو را انداز

Date \_\_\_\_\_

Subject \_\_\_\_\_

$$(a) \frac{1}{t+r} - \frac{1}{r-t} = \frac{t^r}{\Delta t} \Rightarrow \frac{r-t-t-r}{r-t^r} = \frac{t^r}{\Delta t}$$

$$\frac{-r-t}{r-t^r} = \frac{t^r}{\Delta t} \Rightarrow \frac{-r-t}{r-t^r} = \frac{t}{\Delta t} \Rightarrow \frac{-r}{r-t^r} = \frac{1}{\Delta t}$$

$t \neq 0 \Rightarrow n \neq r$

$$\Rightarrow -10 = r-t^r \Rightarrow t^r = 1^r \Rightarrow t = \pm \sqrt[1^r]{1^r} = r-n = \pm 1^r$$

$n = -1^r \Rightarrow$  ~~موجب~~ <sup>موجب</sup> <sub>دارد</sub>

$$(y) n^t (1-n)^t \left( \frac{1}{n^r} + \frac{1}{(1-n)^r} \right) = \frac{170}{9} \Rightarrow (1-n)^t n^t = \frac{170}{9} n^t (1-n)^t$$

$$1 - t n + n^t + n^t = \frac{170}{9} (n(1-n))^t \Rightarrow 1 - t n + t n^t = \frac{170}{9} (n - n^t)^t$$

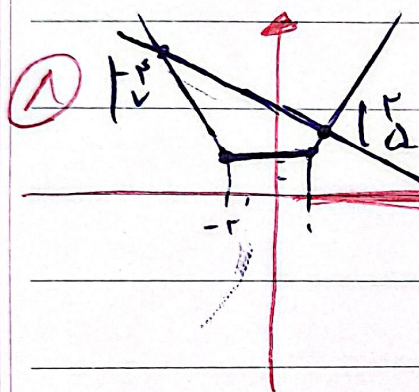
$$1 - t(n^t - n) = \frac{170}{9} (n^t - n)^t \xrightarrow{t=n^t-n} 1 - t t = \frac{170}{9} t^t$$

$$\Rightarrow t = \frac{170}{170} = \frac{170}{170} \Rightarrow n^t - n = \frac{170}{170} \rightarrow s = 170$$

$n^t - n = \frac{170}{170} \rightarrow s = 170$

①  $-n^2 + 7n - 1 > 0 \Rightarrow \frac{-7 \pm \sqrt{49 - 4}}{2} = \frac{-7 \pm \sqrt{45}}{2}$  اشتراک =  $\{1, 6\}$   
 $-n^3 + 4n^2 + 10n - 100 > 0 \Rightarrow \frac{-10 \pm \sqrt{100 - 400}}{2} = \frac{-10 \pm \sqrt{-300}}{2}$

یک ریشه دارد و آن هم  $\sqrt{4} + \sqrt{16} = 2 + 4 = 6$  است  
 $4 + 2 = 6$

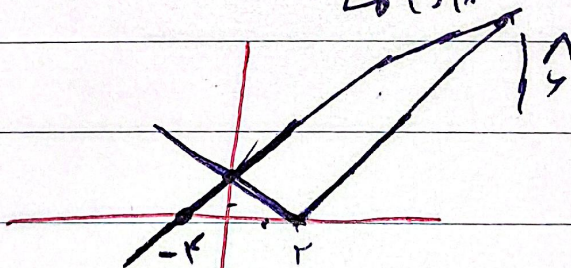


$\Rightarrow n + 1 + n - 1 = 2n + 1 = \frac{16 - n}{n}$   
 $\Rightarrow 7n + 1 = 16 - n$   
 $\Rightarrow 8n = 15 \Rightarrow \boxed{n = \frac{15}{8}}$   
 $\boxed{y = 4}$

$-n + 1 - n + 1 = -2n + 2 = \frac{16 - n}{n} \Rightarrow -4n - 2 = 16 - n$

$\Rightarrow \sqrt{(2+4)^2 + (16-4)^2} = \sqrt{36 + 144} = \sqrt{180} = 6\sqrt{5}$   
 $\Rightarrow \boxed{n = -4}$   
 $\boxed{y = 4}$

②  $y = \frac{n}{2} + 2$   
 $y = |n - 2|$



$2 - (-4) = 6 \Rightarrow \frac{6 \times 2}{2} = 6$   
 $\frac{4 \times 4}{2} = 8$

$18 - 6 = 12$