

$$\frac{1}{n^2} + \frac{1}{(1-n)^2} = \frac{14}{9} \rightarrow \frac{(n-1)^2 + n^2}{n^2(n-1)^2} = \frac{2n^2 - 2n + 1}{(n(n-1))^2} = \frac{14}{9}$$

$$\rightarrow \frac{2(n(n-1)) + 1}{(n(n-1))^2} = \frac{14}{9} \xrightarrow{n(n-1)=t} \frac{2t+1}{t^2} = \frac{14}{9} \xrightarrow{+1} \frac{t^2+2t+1}{t^2} = \frac{149}{9}$$

$$\rightarrow \left(\frac{t+1}{t}\right)^2 = \left(\frac{14}{9}\right)^2 \rightarrow \begin{cases} 1 + \frac{1}{t} = \frac{14}{9} \rightarrow t = \frac{9}{5} \rightarrow n^2 - n = \frac{9}{5} \rightarrow S = 12 \\ 1 + \frac{1}{t} = -\frac{14}{9} \rightarrow t = -\frac{9}{17} \rightarrow n^2 - n = -\frac{9}{17} \rightarrow S = 1 \end{cases} \quad (2) = \text{تکثیر کسر}$$

$$\sqrt{n} + \sqrt{-n^2 + 2n + 1} + \sqrt{n^2 - 4n - 1} = n + 2$$

$$-n^2 + 4n - 1 \geq 0 \rightarrow n^2 - 4n + 1 \leq 0 \rightarrow \frac{2}{1-1} \rightarrow n \in [2, 2] \quad (1)$$

$$-n^2(n-2) + 2(n-2) = (n-2)(2-n)(2+n) \geq 0 \rightarrow \frac{-2}{+2} \frac{+}{-2} \frac{+}{+2} \rightarrow n \in (-\infty, -2] \cup [2, \infty) \quad (2)$$

$$\rightarrow n \in (-\infty, -2] \cup [2, \infty) \quad (1)(2) \rightarrow n=2 \text{ ریشه داری} \rightarrow \text{معادله جواب دارد}$$

$$y = |n+2| + |n-1| \quad y = -\frac{n}{2} + \frac{1}{2}$$

$$A \begin{vmatrix} 2 \\ 8 \end{vmatrix} \quad B \begin{vmatrix} -2 \\ 1 \end{vmatrix}$$

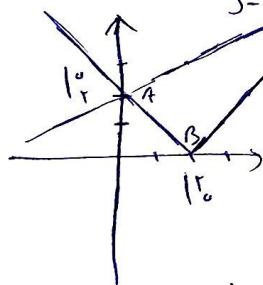
$$-n-1 = -\frac{n}{2} + \frac{1}{2} \quad n = -\frac{n}{2} + \frac{1}{2} \quad n+1 = -\frac{n}{2} + \frac{1}{2}$$

$$\rightarrow |AB| = \sqrt{4^2 + 2^2} = \sqrt{20} = 2\sqrt{5}$$

$$\frac{\partial n}{\partial} = \frac{-2}{2} \quad \frac{n}{2} = \frac{1}{2} \quad \frac{1}{2}n = \frac{1}{2}$$

$$\rightarrow n = -2 \quad \rightarrow n = 1 \quad n \in (-2, 1)$$

$$y = \sqrt{n^2 - 2n + 2} = |n-1| \quad y = \frac{1}{2}n + 2$$



$$\rightarrow \frac{1}{2}n + 2 = |n-1| \rightarrow \begin{cases} n \geq 1 \rightarrow \frac{1}{2}n + 2 = n - 1 \rightarrow n = 4 \\ n < 1 \rightarrow \frac{1}{2}n + 2 = 1 - n \rightarrow n = 0 \end{cases}$$

$$AB \rightarrow y = -n + 2$$

$$AB; |C \text{ و } B| = \frac{|4+1-2|}{\sqrt{2}} = \frac{3}{\sqrt{2}} \rightarrow S = \frac{1}{2} \times \frac{3}{\sqrt{2}} \times 2\sqrt{2} = 3$$

$$\rightarrow \frac{1}{n} + \frac{1}{n+9} = \frac{1}{2}$$

میزان در n ساعت به روز رفتاری، ۳۶ ساعت
نرخ کار در n+9 ساعت

$$\rightarrow \frac{2n+9}{n^2+9n} = \frac{1}{2} \rightarrow n^2+9n = 2n+18 \rightarrow n^2-7n-18=0$$

$$\rightarrow n^2 - 7n - 18 = 0 \rightarrow \begin{cases} n = 36 \\ n = -5 \end{cases}$$