

$$\left. \begin{aligned} \frac{n}{g} &= \frac{\delta}{f} \\ \frac{n+2}{g} &= \frac{1+\sqrt{5}}{r} \end{aligned} \right\} \quad \frac{\frac{n+2}{g}}{\frac{n}{g}} = \frac{\frac{\sqrt{5}+1}{r}}{\frac{\delta}{f}} \rightarrow \frac{n+2}{n} = \frac{r+r\sqrt{5}}{\delta} \rightarrow 2+n = \frac{r+r\sqrt{5}}{\delta} n$$

$$\frac{\sqrt{m^2 + y^2}}{x} = \frac{1 + \sqrt{5}}{r} \xrightarrow{r \text{ cij } \rightarrow} \frac{m^2 + y^2}{m^2} = \frac{1 + \sqrt{5}}{r}$$

$$\Rightarrow 1 + \frac{y^r}{z^r} = \frac{r + \sqrt{a}}{r} \Rightarrow \frac{y^r}{z^r} = \frac{1 + \sqrt{a}}{r} \Rightarrow \boxed{\frac{z^r}{y^r} = \frac{r}{1 + \sqrt{a}}}$$

$$r_a + \sqrt{r_a^2 + f_a} = r \rightarrow \sqrt{r_a^2 + f_a} = r - r_a \xrightarrow{\text{تربيع}} r_a^2 + f_a = r^2 + r_a^2 - 11r_a$$

$$\Rightarrow V a^2 - 14a + 7 = 0 \rightarrow (a-7)(a-\frac{7}{V}) = 0 \rightarrow \begin{cases} a=7 \\ a=\frac{7}{V} \end{cases}$$

$$\frac{az^r}{r} \rightarrow w(r) + \sqrt{r(r)^2 + f(r)} = r \rightarrow 9 + \sqrt{14} \neq r \quad \text{نہیں}$$

$$\xrightarrow{u = \frac{r}{v}} \quad w\left(\frac{r}{v}\right) + \sqrt{r\left(\frac{r}{v}\right)^2 + r\left(\frac{r}{v}\right)} = r \rightarrow \frac{q}{v} + \sqrt{\frac{q^2}{v^2}} = \frac{q}{v} + \frac{q}{v} = \frac{2q}{v} = r \rightarrow$$

$$\frac{\sqrt{n+1}}{\sqrt{n-1} + \sqrt{n}} - \frac{\sqrt{n+1}}{\sqrt{n-1}} = \frac{\sqrt{n-1}}{\sqrt{n-1}} \quad \begin{matrix} \nearrow n-1 \neq 0 \rightarrow n \neq 1 \rightarrow n-1 > 0 \rightarrow n > 1 \\ \searrow n+1 > 0 \rightarrow n > -1 \end{matrix}$$

$$\Rightarrow \boxed{n > 1, n \neq 10}$$

$$\sqrt{n+1} \left(\frac{1}{\sqrt{n-1}+r} - \frac{1}{r-\sqrt{n-1}} \right) = \sqrt{n-1} \rightarrow \sqrt{n+1} \left(\frac{-2\sqrt{n-1}}{10-n} \right) = \sqrt{n-1}$$

$$\Rightarrow -r\sqrt{n+1} = 10 - n \rightarrow r_{n+1} + r_n = 100 + n^2 - r_n n \rightarrow n^2 - 2r_n n + 99 = 0$$

$$\frac{1}{\sqrt{r-m} + r} - \frac{1}{r - \sqrt{r-m}} = \frac{\cancel{r-m} \sqrt{r-m}}{\cancel{r-m} \sqrt{r-m}} \rightarrow \frac{r - \sqrt{r-m} - (\sqrt{r-m} + r)}{(\sqrt{r-m} + r)(-\sqrt{r-m} + r)} = \frac{\sqrt{r-m}}{r}$$

$$\Rightarrow \frac{-r \pm \sqrt{r^2 - 4n}}{2} = \frac{-r \pm \sqrt{r^2 - 4n}}{2} \Rightarrow \frac{-r}{2} = \frac{1}{2} \Rightarrow n+r = -1 \Rightarrow \boxed{n \leq -1}$$

اما ۱۲۲- و مستفی باشد پس رسته مستفی ندارد.

$$\frac{1}{n^2} + \frac{1}{(-n+1)^2} = \frac{140}{9} \rightarrow \left(\frac{1}{n} - \frac{1}{n-1} \right)^2 + \frac{1}{n^2-n} = \frac{140}{9}$$

$$\Rightarrow \frac{1}{n^2-n} = t \rightarrow t^2 + t - \frac{140}{9} = 0 \rightarrow 9t^2 + 9t - 140 = 0 \rightarrow (3t+7)(3t-10) = 0$$

$$\rightarrow t = \frac{10}{3} \rightarrow \frac{1}{n^2-n} = \frac{10}{3} \rightarrow 3n^2 - 10n - 3 = 0 \rightarrow S = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{10 \pm \sqrt{100 + 36}}{6} = 1$$

$$\rightarrow t = -\frac{14}{3} \rightarrow \frac{1}{n^2-n} = -\frac{14}{3} \rightarrow 3n^2 - 14n + 3 = 0 \rightarrow S = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{14 \pm \sqrt{196 - 36}}{6} = 1$$

$$\sqrt{n + \sqrt{-n^2 + 4n + 10}} + \sqrt{n + \sqrt{-n^2 + 4n - 1}} = n + 2$$

$$-n^2 + 4n + 10 \geq 0 \rightarrow -n(n^2 - 4n) \geq 0 \rightarrow (n-4)(n+4)(n-0) \geq 0$$

$$-n^2 + 4n - 1 \geq 0 \rightarrow n^2 - 4n + 1 \leq 0 \rightarrow (n-2)^2 - 3 \leq 0 \rightarrow \frac{-\Delta \pm \sqrt{\Delta}}{2a} = \frac{4 \pm \sqrt{16-4}}{2} = 1 \text{ and } 3$$

$$\textcircled{1} \cap \textcircled{2} \rightarrow \sqrt{n+2} \rightarrow \sqrt{2 + \sqrt{-2^2 + 4(2) + 10}} + \sqrt{2 + \sqrt{-2^2 + 4(2) - 1}} = 2 + 2$$

$$\Rightarrow \sqrt{2} + \sqrt{14} = 2 + 2 \checkmark$$

$$y = |x+2| + |x-1|$$

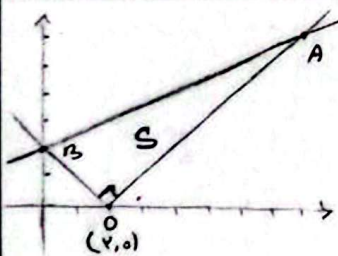
$$y + x = 14 \rightarrow y = -\frac{1}{2}x + \frac{14}{2}$$

$$x \geq 1 \rightarrow x+1 = -\frac{1}{2}x + \frac{14}{2} \rightarrow \boxed{x=2}, \boxed{y=5} \rightarrow A(2,5)$$

$$-1 \leq x < 1 \rightarrow \frac{x+2-x+1}{2} = -\frac{1}{2}x + \frac{14}{2} \rightarrow x=1 \rightarrow \text{قوس مفتوحة}$$

$$x < -1 \rightarrow -x-1 = -\frac{1}{2}x + \frac{14}{2} \rightarrow \boxed{x=-2}, \boxed{y=3} \rightarrow B(-2,3)$$

$$AB = \sqrt{(2-(-2))^2 + (5-3)^2} = \sqrt{20} = 2\sqrt{5}$$



$$y = \sqrt{n^2 - 4n + 4} = \sqrt{(n-2)^2} = |n-2|$$

$$y = \frac{1}{2}n + 2$$

$$A: n \geq 2 \rightarrow 2-2 = \frac{1}{2}n + 2 \rightarrow n=1, y=4 \rightarrow A(1,4)$$

$$B: n < 2 \rightarrow 2-n = \frac{1}{2}n + 2 \rightarrow n=0, y=2 \rightarrow B(0,2)$$

$$AO = \sqrt{(1-0)^2 + (4-0)^2} = 4\sqrt{5}$$

$$BO = \sqrt{(0-0)^2 + (2-0)^2} = 2\sqrt{5}$$

$$\Rightarrow S = \frac{AO \times BO}{2} = \frac{4\sqrt{5} \times 2\sqrt{5}}{2} = \boxed{10}$$

جزئياً $\rightarrow$ حل m
 تماماً $\rightarrow$ حل $m+9$
 لا شيء $\rightarrow$ حل 9

$$\frac{1}{m} + \frac{1}{m+9} = \frac{1}{9} \rightarrow (m+9)9 + 9m = m(m+9)$$

$$\Rightarrow 90 + 110 + 9m = m^2 + 9m \rightarrow m^2 - 20m - 110 = 0$$

$$\rightarrow (m-24)(m+5) = 0 \rightarrow m = -5 \text{ قوس مفتوحة}$$

$$\boxed{m = 24 \text{ تماماً}}$$