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1 $\textcircled{1}$ $\frac{1}{+q} - \frac{p}{-q} +$ $\rightarrow 1 - a + b = \dots$ $\rightarrow 9 - 3a + b = \dots$
 2 $\rightarrow 9 - 3a + b = \dots$ $\rightarrow 4 - 2b = \dots$ $\rightarrow b = 2$
 3 $\rightarrow a + b = \sqrt{\dots}$ $\Rightarrow a = 2$

6 $\textcircled{2}$ $\rightarrow ((k-r)-1 + m-1) (-1 - 3n)^r = \dots$
 7 $\rightarrow (k-r+m-2) (-1-3n)^r = \dots$
 8 $\rightarrow (k-r+m-1) (-1-3n)^r = \dots$
 9 $\rightarrow n = -\frac{1}{3}$
 10 $\rightarrow m = 9 - \Sigma k$
 11 $y = ((k-r)m + (9 - \Sigma k) - 1) (m + \frac{1}{3})^r \Rightarrow y = ((k-r)m + \lambda - \Sigma k) (m + \frac{1}{3})^r$
 12 $((k-r)m + \lambda - \Sigma k) = \lambda - \Sigma k > 0 \Rightarrow k > 4 \Rightarrow k = 1$

13 $k = 1, m = 9 - \Sigma = 0, n = \frac{1}{3} \Rightarrow \frac{m}{n} + k = \frac{0}{1/3} + 1 = -10 + 1 = -9$
 14 $\textcircled{3}$ $-\frac{1}{r} x^r + \dots > \frac{v}{r}$
 15 $-x^r + \Sigma x + 1 > v$
 16 $x^r - \Sigma x < \dots$
 17 $\Delta = \dots$
 18 \dots
 19 \dots

21 $x(x^r - x - 1) + v$
 22 \dots
 23 $\textcircled{2}$
 24 $\textcircled{1} \rightarrow 1 - v - 1 + v = \dots$
 25 $\textcircled{2} \rightarrow rv - rv - a + w = \dots$
 26 $\textcircled{3} \rightarrow -1 - w + 1 + v = \dots$
 27 $f(a+b) = -v$
 28 $(a,b) = (1, 2v)$
 29 \dots
 30 \dots
 31 \dots
 32 \dots

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4) $m \left(\frac{m^r + m}{m-1} \right) \rightarrow \dots$

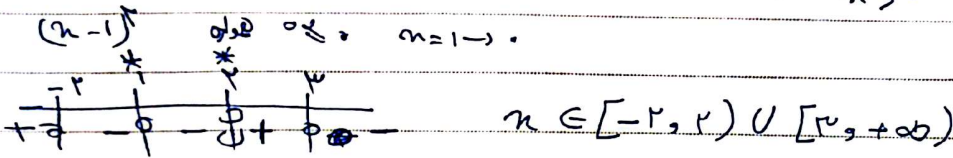
$$\frac{m^{\xi} + m^r}{m-1} \rightarrow m^r (m^r + 1) \Rightarrow \text{اعداد صحیح} \Rightarrow m = p^k$$



5) $\frac{(n-1)(m+r)}{(m^r - m - 1)(n-1)^r} = \frac{(m-r)(n+r)(n-1)^r}{(m^r + n + 1)(r-n)^r}$

$\Delta = 1 - \xi = -r \leftarrow$

$n < r$
 $- n > \dots$



6) $f(n) = \frac{r n^r - r n}{n^r + \xi} \quad y = r$

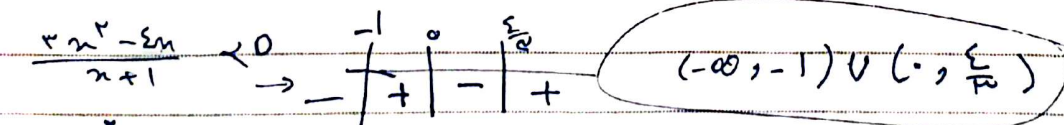
$$\frac{r n^r - r n}{n^r + \xi} < r$$

$$r n^r - r n < r(n^r + \xi) \rightarrow r n^r - r n < r n^r + r \xi \rightarrow -r n < r \xi \rightarrow -r \xi < n < \xi$$

$$(-r, \xi) \rightarrow b - a = \xi + r \xi$$

7) $-1 < \frac{r n^r - \xi n}{n+1} < \dots$

$\frac{n(rn - \xi)}{n+1} \rightarrow n = \dots, n = \frac{\xi}{r}$



$$\frac{r n^r - \xi n}{n+1} > -1 \rightarrow \frac{r n^r - \xi n + n + 1}{n+1} > 0 \rightarrow \frac{r n^r - \xi n + n + 1}{n+1} > 0$$

$n+1 > 0 \Rightarrow n > -1$

$(-1, +\infty)$

$\Delta = 9 - 12 = -3$
 $\Delta < 0 \Rightarrow \dots$

$\Rightarrow (0, \frac{\xi}{r})$

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1 $\textcircled{1-} \quad \frac{n^2 - 1}{n} \leq n$

2
3 $\frac{n^2 - 1 - n^2}{n} \leq \dots \rightarrow \frac{n^2 - n^2 - 1}{n} \leq \dots$
4

5 $n - \delta = 0 \Rightarrow n = \delta$
6 $n + r = 0 \Rightarrow n = -r$
7 $n = 0$

$\begin{array}{c} -r \quad 0 \quad \delta \\ \hline | \quad | \quad | \\ \hline - \quad + \quad - \quad + \end{array} \Rightarrow \begin{array}{l} n < -r \\ - < n < \delta \\ (\infty, -r) \end{array}$

8 $\rightarrow (-\infty, -r] \cup (0, \delta]$

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