

$\sqrt{x^3 f(n+1)} \leq n^2 f(n+1) > 0$ $f(n) = \left(\frac{1}{n}\right)^{n+1-2}$ 14, 15

$x^3 \left(\left(\frac{1}{n}\right)^{n+1} + 1\right) > 0$

n	n^3	$f(n+1)$	$\left(\frac{1}{n}\right)^{n+1} + 1$	میزب
$n < 0$	مثبت	$n < 1$	مثبت	
$n = 1$	2	0	0	
$n > 1$	مثبت	مثبت	مثبت	

$D = [0, 1]$

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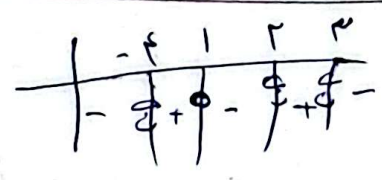
$D_{f(n)} = \{x + (n+2) \mid x > 0\} \rightarrow x + n + 2 > 0 \rightarrow x > -n-2$
 $n - n - 2 \rightarrow$

$D_f = [-1, +\infty)$ فرجه

$D_{f(-n)} = (-\infty, 1]$

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$\frac{n-1}{f(n)} \geq 0$
 $\rightarrow 2, 3, -1$



$D = (-1, 2] \cup [3, +\infty)$

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$\frac{1}{(n^3-1)^2 - (n+2)^2} \geq \frac{1}{(n^3-1+n+2)(n^3-1-n-2)}$
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 $n^3 + n + 1$ $n^3 - n - 3$
 همان سرش n^3

$\sqrt{-(-1+3)} \leq \sqrt{-2}$
 $\sqrt{-(-1-3)} = 2$
 $\sigma_f \leq \frac{1}{n^3 + a + b}$
 $a \leq -1, b \leq -3$

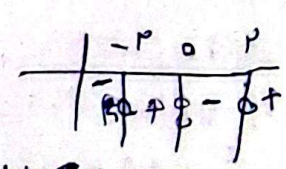
1, 15

$f(n) - f\left(\frac{1}{n}\right) \leq n^3 - n - \frac{1}{n^3} + \frac{1}{n} \geq 0$

$y \leq n^3$
 $\frac{n^3 - n^3 + (n^3 - 1)}{n^3} \geq 0 \rightarrow \frac{y^3 - y^3 + (y^3 - 1)}{y^3} \geq 0$

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$f = n^3 \leq f$
 $n \leq \pm 1$



$D = [-2, 0] \cup [2, +\infty)$

$n^m + n \leq 1 \Rightarrow n=1$ $f(n) = 2n^{m-1} = 2(1)^{m-1} = 2$

$n^m + n \leq 1 \Rightarrow n=1$ $f(1) = 2(1)^m - 1 = 1$

$F(1) \neq F(2) \leq 1 + 2 \leq 1$

$F(n) = n^m - 2n^{m-1} + 1 = (n-2)^m + 2^m \Rightarrow F(\sqrt{m}+2) = (\sqrt{m}+2-2)^m + 2^m = 2^m$
 $g(n) = n^m + 2n^{m-1} + 2^m = (n+2)^m - 2^m \Rightarrow g(\sqrt{m}-2) = (\sqrt{m}-2+2)^m - 2^m = 2^m$

$\Rightarrow \frac{g(\sqrt{m}-2)}{F(\sqrt{m}+2)} = \frac{2^m}{2^m} = 1$

$\sqrt{x+2\sqrt{x-1}} + \sqrt{x-2\sqrt{x-1}} = \sqrt{\frac{1}{2}(x-1) - 2\sqrt{x-1} + 1} + \sqrt{(x-1) + 2\sqrt{x-1} + 1}$
 $= \sqrt{(\sqrt{x-1}-1)^2} + \sqrt{(\sqrt{x-1}+1)^2} = |\sqrt{x-1}-1| + |\sqrt{x-1}+1| = \sqrt{x-1} + 1 + \sqrt{x-1} - 1 = 2\sqrt{x-1}$
 $\Rightarrow a=0, b=2, c=-1$
 $\frac{a+b}{c} = \frac{0+2}{-1} = -2$

$F(1) = \frac{1+1}{1-1+1} = 2$ $F(1) = \frac{1+1}{1-1+1} = 2$
 $F(2) = \frac{2+1}{2-1+1} = 3$ $F(2) = \frac{2+1}{2-1+1} = 3$
 $\frac{g(1)}{F(1)} = \frac{1}{2}$ $\frac{g(2)}{F(2)} = \frac{2}{3}$
 $\Rightarrow \{(1, \frac{1}{2}), (2, \frac{2}{3})\}$

$n^m = 1 \Rightarrow n=1$ $n^m = 1 \Rightarrow n=1$ $n^m = 1 \Rightarrow n=1$
 $F(n) = (1, 1), (2, 1), (3, 1), (4, 1)$
 $F(n^2) = (1, 1), (2, 1), (3, 1), (4, 1)$
 $g(-1) = 2(1) + 1 = 3$ $g(1) = 2(1) + 1 = 3$ $g(2) = 2(4) + 1 = 9$ $g(-1) = 3$
 $F(n) = (1, 1), (2, 1), (3, 1), (4, 1)$
 $\Rightarrow \{(1, 1), (2, 1)\}$