

نام و نام خانوادگی سید علی پور پاسخنامه تشریحی تکلیف شماره ۲۵ کلاس دوازدهم دبیرستان

۱۹/۵ آفرین

$$f(x) = 1 - \frac{a}{x} \quad D_f = [1, \infty) \rightarrow f(1) = 1 - a \rightarrow f(x) = 1 - \frac{a}{x} \rightarrow f'(x) = + \frac{a}{x^2} \rightarrow \frac{a}{x^2} = \frac{a}{3} \rightarrow x = \pm\sqrt{3}$$

$x = -\sqrt{3}$ در بازه ی [۱، ۳] قرار ندارد
پس $x = \sqrt{3}$ تنها قابل قبول است!

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۳ لیست از ناصبی $\rightarrow f(x) = x^3$
 $D_f = (-\infty, 0]$
 $2ax^2 - 5ax + 11a - 2x \xrightarrow{\text{بسط و جمع}} 2ax^2 - 5ax + 11a = 2(ax^2 - \frac{5}{2}ax + \frac{11}{2}a)$
 $\rightarrow \Delta = b^2 - 4ac = 9 - 4 \cdot 2 \cdot \frac{11}{2} = 9 - 44 = -35 < 0$
 $\rightarrow \alpha = \pm \frac{1}{2}$
 $\rightarrow \frac{2ax^2 - 5ax + 11a}{2a} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
 $\rightarrow \frac{-(-5a) \pm \sqrt{25a^2 - 44a^2}}{4a} = \frac{5a \pm \sqrt{-19a^2}}{4a}$
 $\rightarrow \frac{5 \pm \sqrt{-19}}{4}$

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$$2x^3 - 12x + 2 \rightarrow f'(x) = 6x^2 - 12$$

$f(x) = 2x^3 - 12x + 2$
 $f'(x) = 6x^2 - 12$
 $f''(x) = 12x$
 $f(1) = -8$
 $f(-1) = 10$
 $f(0) = 2$

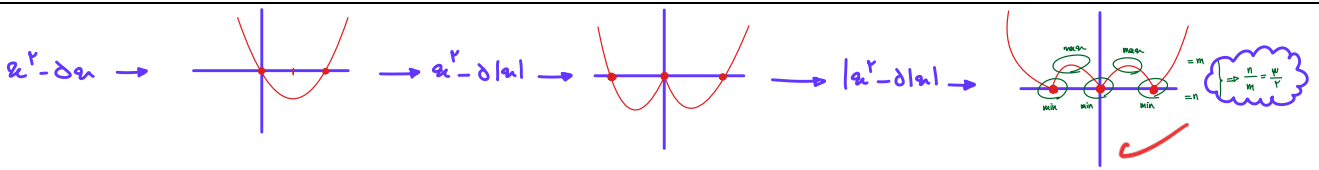
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$$f(x) = x^3 + ax^2 - 2bx - 5 \rightarrow f'(x) = 3x^2 + 2ax - 2b$$

$cat = (0, ?)(-2, ?) \rightarrow f'(0) = 0 \rightarrow b = 0 \rightarrow f(x) = x^3 + 2ax - 5 \rightarrow f'(-2) = 12 - 2a = 0 \rightarrow a = 6$
 $\rightarrow f(x) = x^3 + 12x - 5 \rightarrow f(-1) = -8 - 12 - 5 = -25$
 $f'(-1) = 0 \rightarrow d = \sqrt{1^2 + 25^2} = \sqrt{2506}$

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$$g(x) = |x(1+x^2)| = |x| + |x^3|$$

$$\begin{cases} |x^2 + 2x| & x > 0 \rightarrow g' = 2(1+x) \rightarrow g'(-\frac{1}{2}) = 0 \text{ غلط} \\ |x^2 + 2x| & x < 0 \rightarrow g' = -(2x+2) \rightarrow g'(\frac{1}{2}) = 0 \text{ غلط} \end{cases}$$

$$\begin{cases} g(0) = 0 & g(0) = 0 \\ g(0) = 0 & g(0) = 0 \end{cases}$$

$$\Rightarrow \text{نقطه برای } \downarrow$$

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$$\sqrt[3]{a^2} |x-a| \xrightarrow{\text{توان دوم}} \frac{a^{\frac{2}{3}} x^2 + 0x + 1}{\frac{2}{3}x + 1} = a^{\frac{2}{3}} \frac{x^2 + \frac{3}{2}x + \frac{3}{2}}{2x + 3}$$

$$\rightarrow \text{توان اول} \rightarrow \frac{2ax - a^{\frac{2}{3}}}{2} = 0 \rightarrow ax = \frac{a^{\frac{2}{3}}}{2} \rightarrow x = \frac{a^{-\frac{1}{3}}}{2}$$

$$\rightarrow f(x) = \sqrt[3]{a^2} |a - \frac{a^{-\frac{1}{3}}}{2}| = \sqrt[3]{a^2} \times \frac{a^{-\frac{1}{3}}}{2} = \frac{a^{\frac{5}{6}}}{2} \rightarrow a = 1, a = \frac{8}{27}$$

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$$\sqrt{x^2 - a} = f(x) \rightarrow \begin{cases} \sqrt{x^2 - a} & x > 0 \\ \sqrt{x^2 - a} & x < 0 \end{cases}$$

$$\sqrt{-\frac{1}{2} + \frac{1}{2}} = 0$$

$$\frac{km+n}{k-n} = \frac{\sum_{i=0}^{\infty} 1}{\sum_{i=0}^{\infty} 1} = 1$$

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$$\frac{1}{x} \rightarrow \frac{1}{x} \leq 0 \rightarrow f'(x) = \frac{m(m-1) - \nu}{(x-1+m)^2} \leq 0 \rightarrow m^2 - m - \nu \leq 0$$

$$\frac{-1}{2} \leq x \leq \frac{1}{2}$$

$$x = m-1 \rightarrow m-1 \leq 1 \rightarrow m \leq 2$$

$$m \in \{-1, 0, 1, 2\} \rightarrow m \in \{-1, 0, 1\}$$

$$(1, \infty)$$

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$$\frac{x}{1-x|x|} \rightarrow \begin{cases} \frac{x}{1-x^2} & x > 0 \rightarrow \frac{1-x^2 - (-2x)(x)}{(1-x^2)^2} = 0 \rightarrow 1-x^2+2x^2 = 1+x^2 \rightarrow x=0 \\ \frac{x}{1+x^2} & x < 0 \rightarrow \frac{1+x^2 - (2x)(x)}{(1+x^2)^2} = 0 \rightarrow 1+x^2-2x^2 = 1-x^2 \rightarrow x=0 \end{cases}$$

$$\rightarrow x = -1$$

$$\rightarrow 1 = x|x| \rightarrow x = -1$$

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$$f'(n) < 0 \rightarrow m^2 - n - 2 \leq 0 \rightarrow -1 \leq m \leq 2, m \neq 2 \rightsquigarrow -1 \leq m < 2$$

$$f'(n) > 0 \rightarrow 1 - m \leq 1 \rightarrow m \geq 0$$

$$1, 2 \rightsquigarrow m = 0 \leq 1$$