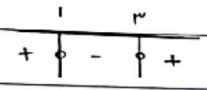


1916

x^r - ax + b | 1 < x < r -> ... a + b = ?



x^r - ax + b = 0 -> 1 - ra + b = 0 -> -ra + b = -1

-> 1 - a + b = 0 -> (-a + b = -1) \* r^r -> ra - rb = r

a + b = r + r = 2r

این سوال در کتاب ریاضیات سوال 101 دارد حل در کتاب ریاضیات سوال 101

-rb = -4 -> b = 2, a = 2

y = ((k-r)x + m - 1) (x - rn)^r

Table with columns x, -1, r and rows P, +, -

این سوال در کتاب ریاضیات سوال 101 دارد

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(k-r)x + m - 1 = 0 ... f(k-r) + m - 1 = 0 -> rk + m = 1

Calculation involving k, m, r and a fraction 1/11

y = -1/4 x^2 + rx + 4 (a, b) > 1/4 b - a = ?

-1/4 x^2 + rx + 4 > 1/4 -> -1/4 x^2 + rx + 4 = 1/4

Let f = f(x) = (-1/4)x^2 + rx + 4 ... (-1, 4) -> b - a = 4 - (-1) = 5

f(x) = x^r - rx^r - r + r ... (a, b) = (1, 3) ... 1+r = r

f(r) = 1 - 1r - r + r = -r ... (r-1)(r+1)(r-r) = -r^2

(a-1)x^r + (a-1)x + 1 ... a < 0 ... a < 0 -> a - 1 < 0 -> a < 1

a^r - ra + 1 - fa + f > a^r - ra + 1 < 0 -> (a-1)(a-r) < 0

m(m^r + m) / (m-r) ... m^r(m^r + 1) / (m-r) ... (r, +infinity) ... m > r

(x^r - x - 4)(x-1)^r < 0 ... (x^r + x + 1)(r-x)^r ... [-r, r) union [r, +infinity)

f(x) = (3x^r - rx) / (x^r + 1) ... (a, b) ... y = r ... max(b-a) = ? ... b - a = r - (-r) = 4 ... (a, b) = (-r, r)

$$-1 < \frac{10x^r - 5x}{x+1} < 0$$

$$1) \frac{10x^r - 5x}{x+1} < 0 \Rightarrow \frac{5x(2x-1)}{x+1} < 0 \Rightarrow \frac{-1 \quad 0 \quad \frac{1}{2}}{-\frac{1}{0} + \frac{0}{0} - \frac{1}{0} +}$$

$$\Rightarrow (-\infty, -1) \cup (0, \frac{1}{2})$$

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$$2) -1 < \frac{10x^r - 5x}{x+1}$$

$$\Rightarrow \frac{10x^r - 5x}{x+1} + 1 > 0 \Rightarrow \frac{10x^r - 5x + x + 1}{x+1} > 0$$

$$\Rightarrow \frac{10x^r - 4x + 1}{x+1} > 0$$

$$\frac{-1 \quad 0 \quad \infty}{-\frac{1}{0} + \frac{0}{0} - \frac{0}{0} +} \Rightarrow (-1, +\infty)$$

$$\Rightarrow (0, \frac{1}{2})$$

$$\frac{x^r - 1}{x} \leq 2 \Rightarrow \frac{x^r - 1}{x} - 2 \leq 0$$

$$\frac{x^r - 1}{x} - 2 \leq 0$$

$$\frac{x^r - 2x - 1}{x} < 0$$

$$\frac{1 \quad 0 \quad \infty}{(x-\infty)(x+2)} < 0$$

$$\frac{-2 \quad 0 \quad \infty}{-\frac{1}{0} + \frac{0}{0} - \frac{0}{0} +}$$

$$\Rightarrow (-\infty, -2] \cup (0, \infty)$$

سوال 2  $x = 2$  این عبارت  $(k-2)x + m - 1$

$$k + m - 9 = 0$$

فرض این عبارت را در صفر قرار دهیم  
 $k - 2 < 0 \rightarrow k < 2 \rightarrow$  صفر  $\rightarrow k = 1$

$$k = 1 \rightarrow m = 8$$

$$\frac{m}{n} + k = \frac{8}{-1} + 1 = -7$$