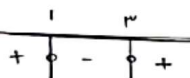


x^r - ax + b | 1 < x < r -> g.m.s.h.a a+b = ?

-1



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

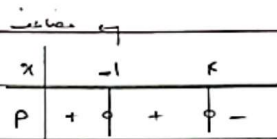
-> 1 - a + b = 0 -> (-a + b = -1) \* r -> ra - rb = r

a+b = r + t = r

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

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

L: x-r = 0 -> -rn = 1



Case 1: (k-r)x + m-1 = 0 L: (a = -1/r) r-b = (k-r)x + m-1 = x-t { k-r=1 -> k=r, m-1=t -> m=-r

Calculation: a) k+m-1 < 0 -> k-r -> k < r -> k=1, m=a -> 1/a + 1 = -1/r

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

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

Let f = f(x) (-1/r) \* a -> x = -r +/- sqrt(r^2 - 4) x = -1/2 a (-1, a) -> b-a = a - (-1) = 1/2

f(x) = x^r - rx^r - x + r x > 0 (x, r) -> (a,b) -> (a,b) (x, r) -> f(x)

x(x^r-1) - r(x^r-1) -> (x-1)(x+1)(x-r) -> (a,b) = (1, r) 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 = ?

a < 0 -> a < -1 < 0 -> a < -1

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

a < 0 -> a < -1 < 0 -> a < -1

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

(x^r - x - 4)(x-1)^r < 0 (x-r)(x+r)(x-1)^r -> 1^r (x^r+x+1)(r-x)^r

D: [-r, r) union [r, +infinity)

f(x) = (rx^r - rx) / (x^r + t) (a,b) y=r max(b-a) = ?

rx^r - rx < r -> rx^r - rx - r < 0 -> rx^r - rx - A (x-r)(x+r) < 0

b-a = r - (-r) = 4 (a,b) = (-r, r)

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

-9

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

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

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

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

$$\frac{rx^r - rx - x - 1}{x+1} > 0$$

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

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

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

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

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

$$\frac{-r \quad 0 \quad \omega}{(x-\omega)(x+r)} < 0$$

$$-\frac{r}{0} + \frac{0}{0} - \frac{\omega}{0} +$$

-10

$$\Rightarrow (-\infty, -r] \cup (0, \omega]$$