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$$x^r - sx + p = y$$

$$S = a = 8 \quad b = p = 2 \times 1 = 2$$

$$a + b = v$$

x	-1	r
p	$+$	$-$

$$((k-r)x + m - 1)(x - r_n)$$

$$(m - r_n) = y \rightarrow (-1 - r_n) = -$$

$$-1 - r_n = 0$$

$$-1 = r_n$$

$$-\frac{1}{r} = n$$

$$k - r < 0 \quad (k-r)m + m - 1 = y$$

$$k < r$$

$$k < n$$

$$rk - n + m - 1 = 0$$

$$k = 1 \Rightarrow r - n + m - 1 = 0$$

$$m = 2$$

$$\frac{2}{-1/r} + k = -12$$

~~$$-\frac{1}{r} x^r + r x + 4 = f(x)$$~~

~~$$x^r + r x - r = 0$$~~

~~$$x = \frac{-r}{-1/r} = 4 \quad \text{و} \quad \frac{1}{-1/r} = -r$$~~

$-r$	4
$-r$	$+$

~~$$4 - (-r) = 1$$~~

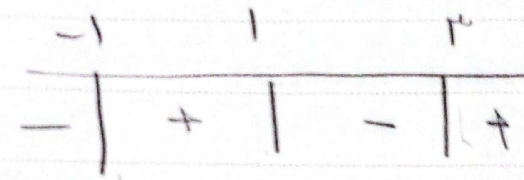
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$$f(x) = x^r - r x^{r-1} - x + r = x^r (x - r) - x + r \quad \textcircled{2}$$

$$(x^r - 1)(x - r) = (x - 1)(x + 1)(x - r)$$

$\textcircled{1, a}$



$$f(r) = -r$$

$\Rightarrow \bar{0} \bar{0} \bar{\epsilon} \quad (1, r) \rightarrow r : \dots$

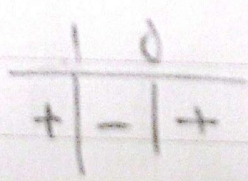
~~$$\frac{1 - r^2 - r + r^2}{-2 - 1} = d$$~~

$$a - 1 < 0$$

$\textcircled{2, a}$

$$(a - 1)^r - \epsilon a + r = a^r + 1 - r a - \epsilon a + \epsilon$$

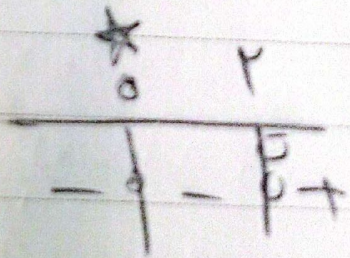
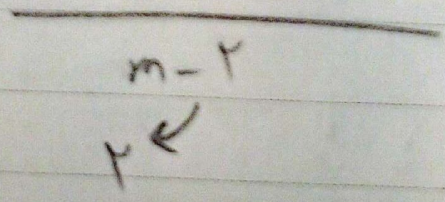
$$a^r - r a + d < 0$$



$$a \in \emptyset$$

$$\lim_{m \rightarrow \infty} (m^r + n) \rightarrow 0$$

$\textcircled{3, a}$



$$m \in (r + \infty)$$

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$$\frac{(n-r)(n+r)(n-1)^r}{(n^r+n+1)(r-n)^r} <$$

(r) (v)

$$(n^r+n+1)(r-n)^r$$

+ve

	-r	1	r	r	
+	0	-	0	+	-

$$[-r, r) \cup [r, +\infty)$$

$$f(n) = y$$

(r) (1)

$$\frac{r^2n^r - rn - r^2n^r - 1}{n^r + \epsilon} <$$

	-r	+\epsilon		
+	0	-	0	+

$$(-r, \epsilon) \rightarrow \epsilon - (-r) = 4$$

$$\frac{r^2n^r - \epsilon n + n + 1}{n + 1}$$

(1) (9)

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

$$\frac{r^2n^r - r^2n + 1}{n + 1} \rightarrow \text{not } \mathbb{R} + \text{II } (-\infty, -1) \cup (0, \frac{\epsilon}{r})$$

	0	+\frac{\epsilon}{r}	
-	0	+	+

$$I \cap \text{II} = (-\infty, \frac{\epsilon}{r})$$

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

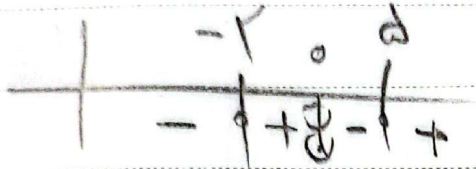
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$$\frac{x^2 - 10 - 12x}{n} < 0$$

5 (1)

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

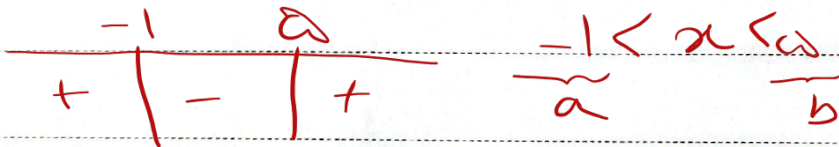


$$y > \frac{v}{r}$$

10/10

$$-\frac{1}{r} x^2 + 12x + 9 > \frac{v}{r} \xrightarrow{\times (-r)} x^2 - 12x - 9 < -v$$

$$x^2 - 12x - 9 < -v \quad (x - 6)(x + 3) < 0$$



$$b - a = 6 - (-3) = 9$$