

1) $y \sqrt{nf(m)} \geq 0 \quad m f(m) = 0 \Rightarrow D = [-a, 0] \cup [r, a]$

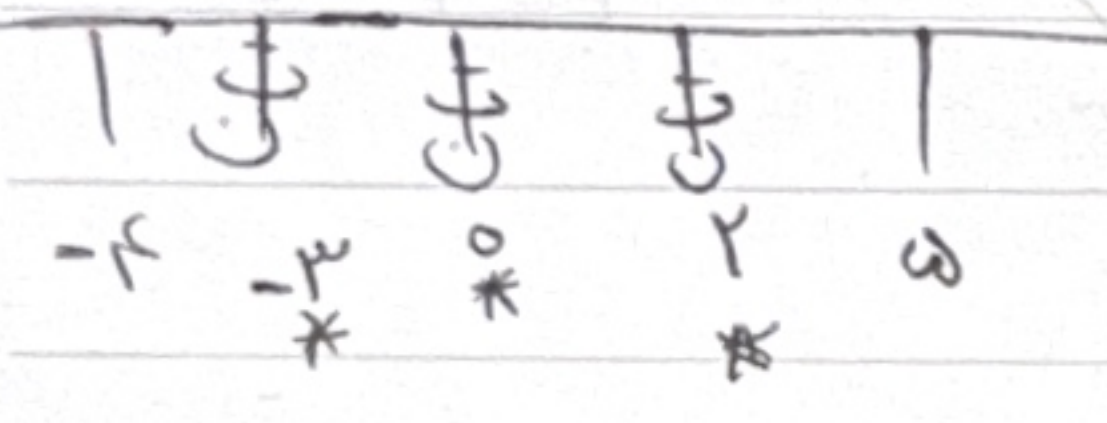
$(-a, -a)$	n	$f(m)$	$nf(m)$
	-	+	-X
$(-a, 0)$	-	-	+V
$(0, r)$	+	-	-X
(r, a)	+	+	+V

Ⓟ ✓

2) $\sqrt{\frac{-n}{f(m)}} \quad \frac{-n}{f(m)} \geq 0 \rightarrow f(m) \neq 0$

- $f(m) < 0 \rightarrow (-r, -r)$
- $f(m) > 0 \rightarrow (-r, 0)$
- $f(m) < 0 \rightarrow (0, r)$
- $f(m) > 0 \rightarrow (r, a)$

Ⓟ ✓



$\Rightarrow D = (-r, 0) \cup (0, r) \Rightarrow r \in \mathbb{R}$

3) $f(r) - r f(r) = r^r - r(r) + r$

$-f(r) \leq r - r + r \Rightarrow -f(r) \leq r \rightarrow f(r) \geq -r \quad n \leq -r \Rightarrow (-r)^r - r(-r) + r \leq$

$f(-r) \leq 1$

$f(r) + r \leq r$

Ⓟ ✓

4) $f(a) = a - \sqrt{a+r} \Rightarrow a - r = r$

$\frac{f(f(a))}{V} = f(r) \xrightarrow{r \leq r} f(r) = r(r) + r \leq V$

$V + r = 9$

$f(1) = r(1) + r \leq a$
 $f(f(1)) = f(a) \leq r$

Ⓟ ✓

5) $f(n-1) = a(n-1)^r - b(n-1) + r$

$a(n^r - rn + 1) - bn + b + r \Rightarrow an^r - ran + a - bn + b + r$

$f(n-1) - f(n) \Rightarrow (an^r - ran + a - bn + b + r) - (an^r - b(n+r)) = ran + b + a$

$ran + a + b = 9n + r \rightarrow a + b = r$

$-ra = 9$

$-r + b = r$

$a = r$

$b = a$

$a - b = r - a$

$a - b = -n$

Ⓟ ✓

$$4) f'(x) = [f(x)]^r \Rightarrow f(x) = x^r - r(x) + 1 = 9 - 9 + 1 = 1$$

$$f(-1) = (-1)^r - r(-1) + 1 \Rightarrow 1 + r + 1 = 0$$

$$f(x) = x^r - r(x) + 1 = x^r - 9 + 1 = -1 \quad f'(x) = (-1)^r = 1 \quad \frac{f(1) + 0}{1} = \frac{1}{1} = 1$$

$$V) f(x) = r(x) + 1 \Rightarrow r \leq x \quad f(-r) \rightarrow -r < r$$

$$f(-r) = (-r)^r = r \rightarrow f(r) = r(x) + 1 = r \quad \frac{r(13) - r(1)}{1} = \frac{r(9 - 1)}{1} = 8r$$

$$N) f = \{(x, y), (x, r), (r, 1), (1, y)\}$$

$$f(x) = 1 \Rightarrow y = 9 \quad f(r) = r \quad f(f(r)) = f(r) = r \quad 9 - 9 = 0$$

$$(f(f(x))) = 1 \quad f(1) = r = 9 - r = 5 \quad \frac{0}{5} = 0$$

$$9) n \leq \sqrt{x} - r \rightarrow n + r \leq \sqrt{x} \quad n^r + f(n) + a = (n + r)^r + 1 \Rightarrow (\sqrt{x})^r + 1 = r + 1 = r$$

$$(n^r + f(n) + a) + r \Rightarrow f(n) = \frac{r + r}{r} \quad f(n) = (\sqrt{x} - r) \leq r$$

$$\frac{r^r + f(r) + 9}{r^r + f(r) + a} = \frac{r}{14}$$

$$10) \sqrt{n} \geq 0 \quad n \geq 0 \quad n \neq 0 \quad \boxed{n > 0} \quad (\sqrt{n})^r = n \quad f((n)^r) \leq f(n)$$

$$f(n) - f(n) = 0 \Rightarrow (n > 0)$$

$$f(n) = nr + \frac{1}{nr} \rightarrow f(\sqrt{n}) = (\sqrt{n})^r + \frac{1}{(\sqrt{n})^r} = n + \frac{1}{n}$$

$$f(\sqrt{n})^r - f(n) = (n + \frac{1}{n})^r - (nr + \frac{1}{nr})$$

$$nr + \frac{1}{nr} + r - nr - \frac{1}{nr} = r$$