

$y = \sqrt{f(x)}$ $[-5, 0] \cup [2, 5]$ $-5 \leq x \leq 0 \text{ or } 2 \leq x \leq 5$ $f(x) \geq 0$ $x = 0, 5, -5, 2$ $f(x) = 0$	1
$y = \sqrt{\frac{-x}{f(x)}}$ $\frac{-x}{f(x)} \geq 0$ $f(x) \neq 0 \Rightarrow x \neq 5, 2, 0, -3$ $(-3, 0) \cup (0, 2)$	2
$f(x) \rightarrow f(x) = x - 2$ $-f(x) = -x + 2$ $f(x) = 2$ $f(-x) \rightarrow f(-x) = -x + 2$ $f(-x) = 2$	3
$f(f(0)) + f(f(1)) = 7$ $f(1) = 1 - \sqrt{1+4} = -1$ $f(0) = 0 - \sqrt{0+4} = -2$ $f(2) = 2 - \sqrt{2+4} = -1$ $f(1) = -1$ $f(0) = -2$ $f(2) = -1$ $f(1) = -1$ $f(0) = -2$ $f(2) = -1$	4
$f(a-1) - f(a) = 4a + 2$ $f(a) = a^2 - ba + 2$ $a = 2 \rightarrow f(a) = 4 - 2b + 2 = 6 - 2b$ $f(a-1) = (a-1)^2 - b(a-1) + 2 = a^2 - 2a + 1 - ba + b + 2 = a^2 - (2+b)a + (3+b)$ $f(a) = a^2 - ba + 2$ $f(a-1) - f(a) = a^2 - (2+b)a + (3+b) - (a^2 - ba + 2) = -2a + 1 + b = 4a + 2$ $-2a + 1 + b = 4a + 2$ $-6a + b = 1$ $a = -3$ $b = 0$	5

$$\frac{f(r) + f(-r)}{f(r)} = 4$$

$$f(a) = a^r - r a + 1$$

$$f(r) = 2 - 1 + 1$$

$$f(-1) = 1 + r + 1$$

$$f(r) = 2 - 1 + 1$$

6

$$\frac{f(r) - f(-r)}{f(r)} = \frac{1}{v}$$

$$f(a) = \begin{cases} r a + 1 & a \geq r \\ a^r & a < r \end{cases}$$

$$f(r) = 1^r$$

$$f(-r) = r$$

$$f(r) = v$$

v

$$\frac{f(f(r)) - f(f(r))}{f(1) - r} = \frac{0}{f} = 0$$

$$f = \{(r, r), (r, r), (r, 1), (1, r)\}$$

$$f(r) = 1 \quad f(1) = r$$

$$f(r) = r \quad f(r) = r$$

1

$$f(f(\sqrt{r-r})) = 9$$

$$f(r) = \frac{r^r + 0}{r^r + 1} = \frac{r}{1+r}$$

$$f(\sqrt{r-r}) = \frac{(\sqrt{r-r})^r + 0}{(\sqrt{r-r})^r + 1} = \frac{1}{r} = r$$

9

$$(f(\sqrt{a}))^r - f(a)$$

$$f(a) = a^r + \frac{1}{a^r}$$

1.

$$\left(a + \frac{1}{a}\right)^r = a^r - \frac{1}{a^r} = \frac{r}{1}$$