

$$D_f = [-5, 5] \cup [1, 5]$$

$f(x) \geq 0$
 $\frac{-x}{f(x)} \geq 0$
 $\frac{-x}{f(x)} \geq 0$

✓

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$$f(x) \geq 0$$

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$$\frac{-x}{f(x)} \geq 0$$

حالت اول: $f(x) < 0, x > 0$
 حالت دوم: $f(x) > 0, x < 0$

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

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

✓

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

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

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

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

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

$$\omega - \sqrt{\frac{r}{r}} = +r$$

$$V + r = \frac{r}{r} = f(f(\omega)) + f(f(1))$$

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$$f(x) = ax^r - bx + r$$

$$a(x-1)^r - b(x-1) + r$$

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

$$a - b = -r - \omega = -1$$

$$a(x-1)^r - b(x-1) + r$$

$$-r a x + a + b = r x + r$$

$$f(x) = a x^r - r x + a - b x + b + r$$

$$-r a x + a + b = r x + r$$

$$a x^r - r a x + a - b(x) + b + r$$

$$-r a x + a + b = r x + r$$

$$-r a x + a + b = r x + r$$

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$$f(x) = x^2 - x + 1$$

$$f(1) = 1 - 1 + 1 \rightarrow f(1) = 1$$

$$f(-1) = 1 + 1 + 1 \rightarrow f(-1) = 3$$

$$f(x) = x^2 - x + 1 = -1 \rightarrow f(x) = -1$$

$$\frac{f(1) + f(-1)}{f(1)} = \frac{1 + 3}{1} = 4$$

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$$\frac{f(f(x)) - f(x)}{f(x)} = \frac{f^2(x) - f(x)}{f(x)} = \frac{x^4 - x^2}{x^2 - x + 1} = \frac{x^2(x^2 - 1)}{x^2 - x + 1}$$

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$$f(x) \rightarrow x^2 + 1 = 17 \Rightarrow x^2 = 16 \Rightarrow x = \pm 4$$

$$f(x) \rightarrow x^2 = 16 \Rightarrow x = \pm 4$$

$$f(x) \rightarrow x^2 + 1 = 17 \Rightarrow x^2 = 16 \Rightarrow x = \pm 4$$

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

$$f(1) = 1$$

$$f(x) = 1 \Rightarrow f(1) = 1$$

$$f(f(x)) = f(1) = 1$$

$$\frac{x^2 + x + 1}{x^2 + x + 1} = \frac{x^2 + x + 1}{x^2 + x + 1} = 1$$

$$f(\sqrt{x}) = x$$

$$\frac{x + 1}{x + 1} = 1$$

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$$f(x) = x^2 + \frac{1}{x}$$

$$f(x) = x^2 + \frac{1}{x}$$

$$(x + \frac{1}{x})^2 = x^2 + 2 + \frac{1}{x^2} = x^2 + \frac{1}{x^2} + 2$$

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