

$$y = f(x) \rightarrow [-4, 5]$$

$$y = \sqrt{x f(x)} \rightarrow x f(x) \geq 0 \rightarrow D: [2, 5]$$

$$[-4, 5]$$

$$y = \sqrt{\frac{-x}{f(x)}} \rightarrow \frac{-x}{f(x)} \geq 0 \rightarrow -x \geq 0 \Rightarrow x \leq 0$$

$$D: [-4, 0]$$

$$f(x) - 2f(r) = x^2 - 4x + 4$$

$$f(r) - 2f(r) = 4 - 4 + 4 \Rightarrow -f(r) = 4 \Rightarrow f(r) = -4$$

$$f(-r) + 4 = 4 + 4 + 4 \Rightarrow f(-r) = 4$$

$$f(f(1)) \rightarrow f(5) \rightarrow 2$$

$$2(1) + 3 = 5$$

$$2$$

$$5 - \sqrt{5+4} = 2$$

$$\Rightarrow 2+2=4$$

$$f(f(5)) \rightarrow 2$$

$$2$$

$$f(n) = an^r - bn + r$$

$$n=1$$

$$f(n-1) - f(n) = 4n + r$$

$$r - a + b - r = 4 + r \rightarrow -a + b = 4 \Rightarrow a - b = -4$$

$$f(n) = n^r - 4n + 1$$

$$\frac{rf(r) + f(-1)}{f'(r)} = \frac{r + 1}{1} = V$$

$$\frac{rf(r) - rf(-r)}{f(r)} = \frac{r^2 - 1}{V} = \frac{r-1}{V}$$

$$f = \{(1, 4), (2, 2), (3, 1), (4, 0)\}$$

$$\frac{f(f(r)) - f(f(r))}{f(1) - r} = \frac{4 - 4}{r} = 0$$

$$f(n) = \frac{n^r + rn + 9}{n^r + rn + 9} \Rightarrow$$

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

$$\frac{\cancel{n^r} - \cancel{r}\sqrt{r} + \cancel{r}\sqrt{r} - A + 9}{\cancel{n^r} - \cancel{r}\sqrt{r} + \cancel{r}\sqrt{r} - A + 9} = \frac{1}{r} = r \Rightarrow$$

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$$f(r) = \frac{r + 1 + 9}{r + 1 + 9} = \frac{r1}{14}$$

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

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$$(\underbrace{f(\sqrt{n})})^r - f(n) =$$

$$n^r + \frac{1}{n^r} + r - n^r - \frac{1}{n^r} = \boxed{r}$$

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