

$$y = \sqrt{x f(x)} \rightarrow x f(x) \geq 0$$

$$f(x) > 0 \rightarrow [-4, -\omega), (2, \omega] \quad / \quad f(x) < 0 \rightarrow (-\omega, 2]$$

$$D_f = [-\omega, 0] \cup (2, \omega]$$

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

$$f(x) > 0 \rightarrow (2, \omega), (-3, 0)$$

$$f(x) < 0 \rightarrow (-\infty, -3), (0, 2)$$

$$D_f = (-3, 0) \cup (0, 2)$$

$$-\infty, -3 \rightarrow -2, -1, 1 \rightarrow (3)$$

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$$f(x) = f(x) - x f(x) = x^2 - 3x + 4 = -x$$

$$f(x) - x(-x) = x^2 - 3x + 4 \rightarrow f(x) + x = x^2 - 3x + 4$$

$$f(x) = x^2 - 3x$$

$$f(-2) = (-2)^2 - 3(-2) = \boxed{-10}$$

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$$f(f(\omega)) \rightarrow \omega - \sqrt{\omega + 4} = \omega - 3 = 2 \rightarrow f(2) = 2(2) + 3 = 7$$

$$f(f(1)) \rightarrow 2(1) + 3 = 5 \rightarrow f(5) = 5 - \sqrt{5 + 4} = 2$$

$$f(f(\omega)) + f(f(1)) = 7 + 2 = \boxed{9}$$

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

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

$$(a x^2 - 2a x + a - b x + b + 2) - (a x^2 - b x + 2) = 4x + 2 \rightarrow -2a x + a + b = 4x + 2$$

$$-2a = 4 \rightarrow a = -2, a + b = 2$$

$$-2 + b = 2 \rightarrow b = 4$$

$$a - b = -2 - 4 = \boxed{-6}$$

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$f(w) = w^r - w(w) + 1 = 1$ $f(-1) = (-1)^r - w(-1) + 1 = w$ $f(r) = r^r - w(r) + 1 = -1$ $f^r(r) = (-1)^r = 1$	$\frac{r f(w) + f(-1)}{f^r(r)} = \frac{r(1) + w}{1} = \boxed{r}$	6
$f(x) = w(x) + 1 = 1w$ $f(-r) = (-r)^r = r$ $f(r) = w(r) + 1 = v$ $\frac{w f(x) - r f(-r)}{f(r)} = \frac{w(1w) - r(r)}{v} = \boxed{\frac{w1}{v}}$	$\boxed{r} \checkmark$	v
$f(f(x)) \rightarrow f(1) = 4$ $f(f(w)) \rightarrow f(r) = 4$ $f(f(x)) - f(f(w)) = 4 - 4 = 0$	$f(1) = r = 4 - r = r$ $\frac{4 - 4}{r} = 0$	1
$x^r + \varepsilon x = (\sqrt{w} - r)^r + r(\sqrt{w} - r) = w - r\sqrt{w} + r + r\sqrt{w} - r = -1$ $f(\sqrt{w} - r) = \frac{-1 + 9}{-1 + w} = \frac{1}{r} = r$ $f(r) = \frac{r^r + r(r) + 9}{r^r + r(r) + w} = \frac{r + 1 + 9}{r + 1 + w} = \boxed{\frac{r1}{1v}}$	$\boxed{r} \checkmark$	9
$f(\sqrt{x}) = (\sqrt{x})^r + \frac{1}{(\sqrt{x})^r} = x + \frac{1}{x}$ $(f(\sqrt{x}))^r = (x + \frac{1}{x})^r = x^r + r(x)(\frac{1}{x}) + \frac{1}{x^r} = x^r + r + \frac{1}{x^r}$ $(x^r + r + \frac{1}{x^r}) - (x^r + \frac{1}{x^r}) = x^r + r + \frac{1}{x^r} - x^r - \frac{1}{x^r} = \boxed{r}$	$\boxed{r} \checkmark$	1.