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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----|
| $f(x) = (x)^x - x(x) + 1 = 1$ $f(-1) = (-1)^1 - x(1) + 1 = 0$ $f(x) = (x)^x - x(x) + 1 = -x$ $f^x(x) = (-1)^x = 1$                                                                                                                                                                      | $\frac{x(1) + 0}{1} = x$ | 6  |
| $f(x) = x(x) + 1 = 1^x \quad x > 1$ $f(-x) = (-x)^x = 1^x \quad -x < x$ $f(x) = x(x) + 1 = x \quad x > 1$ $\frac{x(1^x) - x(x)}{x} = \frac{x1}{x}$                                                                                                                                      |                          | 7  |
| $f(f(x)) = f(1) = 9 \quad f(x) = 1$ $f(f(x)) = f(x) = 9 \quad f(x) = x$ $f(1) = 9$ $\frac{9-9}{9-1} = 0$                                                                                                                                                                                |                          | 8  |
| $f(x) = \frac{(x^x + f(x) + 0) + x}{x^x + f(x) + 0} = 1 + \frac{x}{x^x + f(x) + 0}$ $x + y = \sqrt{x}$ $(x+y)^x = x$ $x^x + f(x) + x = x$ $x^x + f(x) = -1$ $f(\sqrt{x-1}) = \frac{-1+9}{-1+0} = \frac{8}{-1} = -8$ $f(x) = \frac{(x)^x + f(x) + 9}{(x)^x + f(x) + 0} = \frac{x1}{1^x}$ |                          | 9  |
| $f(\sqrt{x}) = (\sqrt{x})^x + \frac{1}{(\sqrt{x})^x} = x + \frac{1}{x}$ $f(\sqrt{x})^x = \left(x + \frac{1}{x}\right)^x = x^x + x + \frac{1}{x^x}$ $x^x + x + \frac{1}{x^x} - x^x - \frac{1}{x^x} = (x)$                                                                                |                          | 10 |