

$$x = a$$

$$a^2 + 2a$$

$$a^2 - f$$

$$a^2 + 2a = a^2 - f$$

$$a = -f$$

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$$f(x) + b = 3$$

$$f + b = 3$$

$$b = -1$$

$$f(x) = \frac{x^2 + a}{2x + 1} = \frac{x^2 + 11}{2x + 1}$$

$$3 = \frac{f + a}{a}$$

$$10 = f + a$$

$$a = 11$$

$$f(1) = \frac{1 + 11}{2 + 1} = \frac{12}{3} = 4$$

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$$\frac{fx + 1}{a(x+1)(x-f)} = \frac{fx + 1}{a(x^2 + x - f)} = \frac{fx + 1}{2x^2 + ax + b} = \frac{fx + 1}{2x^2 - 9x - 1}$$

$$a = -9$$

$$b = -1$$

$$f(1) = \frac{f + 1}{2 - 9 - 1} = \frac{0}{-12}$$

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$$\frac{x^2 - 5x}{a(x+1)^2} = \frac{x^2 - 5x}{a(x^2 + 2x + 1)} = \frac{x^2 - 5x}{-fx^2 + ax + b} = \frac{x^2 - f}{-fx^2 - 12x - f}$$

$$a = -f$$

$$a = -1$$

$$b = -f$$

$$a + b = -12$$

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

$$x^2 + mx + 1 = x^2 - 2x + 1$$

$$m = -2$$

$$x^2 + mx + 1$$

$$m^2 - f < 0$$

$$(m - 2)(m + 2) < 0$$

$$\Delta = 0$$

$$1 = \frac{m}{2}$$

$$(-2, 2) \cup \{-2\} \rightarrow [-2, 2]$$

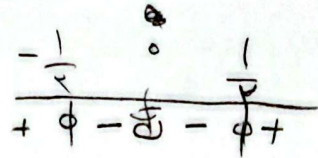
$$a < 0$$

$$\frac{-2}{+4 - 4} \quad \frac{2}{-4 - 4}$$

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

$$\begin{aligned} f(x^2-1) &= 0 \\ \frac{x^2-1}{x^2} &= 1 \\ x^2 &= \frac{1}{x} \\ x &= \pm \frac{1}{x} \\ x^2 &= 0 \\ x &= 0 \end{aligned}$$



$$(-\infty, -\frac{1}{x}] \cup [\frac{1}{x}, +\infty)$$

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$$\sqrt{x} = x \geq 0$$

$$m=0 \quad f(x) = \sqrt{1} = 1 \checkmark$$

$$\begin{aligned} m > 0 \\ \Delta \leq 0 \\ f_m^2 - f_m \leq 0 \\ f_m(m-1) \leq 0 \\ m \in [0, 1] \end{aligned}$$

$$\rightarrow (0, 1] \cup \{0\} \rightarrow [0, 1]$$

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$$g\left(\frac{1}{x}\right) = f\left(\frac{1}{x}\right)$$

$$x\left(\frac{1}{x}\right) + 1 = f\left(\frac{1}{x}\right) + k$$

$$\begin{aligned} x &= x + k \\ k &= 0 \end{aligned}$$

$$\frac{f(x^2-1)}{x^2-1} \quad \begin{aligned} yx=1 \\ x = \frac{1}{y} = a \end{aligned} \quad \dot{=}$$

$$a+k = \frac{1}{x} + 0 = \frac{1}{x}$$

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$$f(1) = g(1)$$

$$g(x) = 3x - 2$$

$$\frac{g(1) - f}{x(1) + 2} = x(1) + b$$

$$g\left(-\frac{x}{x}\right) = f\left(-\frac{x}{x}\right)$$

$$f\left(-\frac{x}{x}\right) - 2 = a\left(-\frac{x}{x}\right) + 2$$

$$\frac{a}{a} = 1 = 2 + b$$

$$b = -2$$

$$-f = -2a + 2$$

$$-9 = -2a$$

$$2a = 9$$

$$a = \frac{9}{2}$$

$$a - b = 3 - (-2) = 5$$

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$$g(x) = f(x) = x + 2 = xa^2 + 2a$$

$$xa^2 + 2a = f$$

$$xa^2 + 2a - f = 0$$

$$a^2 + a - 2 = 0$$

$$(a-1)(a+2) = 0$$

$$a = -2$$

$$a = 1$$

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