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1) $y = x^2 - 3$

$y = x + \Delta x - 3(x + \Delta x - x^2 - 3x$

$x^2 + 2x\Delta x + \Delta x^2 - 3x + 3\Delta x - x - 3x$

$\frac{\Delta x(2x + \Delta x + 3)}{\Delta x}$

$3.4 - 3 = 5$

$2x + \Delta x - 3 - y - 4 = 5(x - 4)$

$y - 4 = 5(x - 4)$

2) a) $\frac{x+1}{3+1}$ $\frac{x-y-4}{x-3} = \frac{x-3}{x-3} = 1$

$y - 4 = 1(x - 3)$

$y - 4 = x - 3$

$y = x - 3 + 4$

$y = x + 1$

b) $x^2 - 2x$ $x^2 + 2x\Delta x + \Delta x^2 - 2x - 2\Delta x^2$

$2x\Delta x = 2\Delta x + \Delta x$

$y = x - 1 - \Delta x$

$\Delta x(2x - 2 + \Delta x)$

$m = 2.1.2$ $n = 0$ $y = 0(x - 1)$

$y = -1$

tilibra

3) $x \to 2$

$3 - 3^2$

$3 - 9$

$= 6$

$\frac{x - x^2}{x-3} + 6 = \frac{x^2 - x - 6}{x-3}$

$\frac{(x+2)(x-3)}{x-3} = -(x+2)$

$-(3+2)$

-5

4) a) $\frac{3x+1}{x-2} - 7 = 3x + 1 = 7$

$\frac{3x-6}{x-2} = 3\left(\frac{x-2}{x-2}\right) = 3$

b)

c) $x^2 = -1^3 = -1$

$\frac{x^3 - (1)}{x - (-1)}$ $\quad \frac{x^3+1}{x+1}$

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

$x^2 - x + 1$

$1^2 + 1 + 1$

$3 //$