$(x^2 - 6) \div (x+4)$

$$x+4 \overline{)\, x^2 + 0x - 6}$$

$x - 4$

$(-)\ x^2 + 4x$

$-4x - 6$

$(-)\ -4x - 16$

10

$$x - 4 + \frac{10}{x+4}$$

$y = 2x^2 - 16x - 1$ axis of symmetry & vertex

$x = \frac{-b}{2a}$ $x = \frac{16}{2(2)} = 4$

$y = 2(4)^2 - 16(4) - 1$

$y = 32 - 64 - 1 = -33$

Vertex $(4, -33)$

axis of symmetry $x = 4$

$y = x^2 \rightarrow y = -4(x-2)^2 - 5$ How did it change?

$a = -4$ ↕ & Narrow

Vertex $(2, -5)$ Right 2 & Down 5

$(x+4)^3$

$(x+4)(x+4)(x+4) \rightarrow (x+4)(x^2+8x+16)$

$x^2 + 4x + 4x + 16$

$x^2 + 8x + 16$

$x+4$			
x	x^3	$+8x^2$	$+16x$
4	$4x^2$	$32x$	64

$x^3 + 12x^2 + 48x + 64$

$y = x - 3$ Find solution to the system of equations

$x - y = 3$

$x - (x-3) = 3$

$x - x + 3 = 3$

$3 = 3$

Many solutions