

## Function transformation

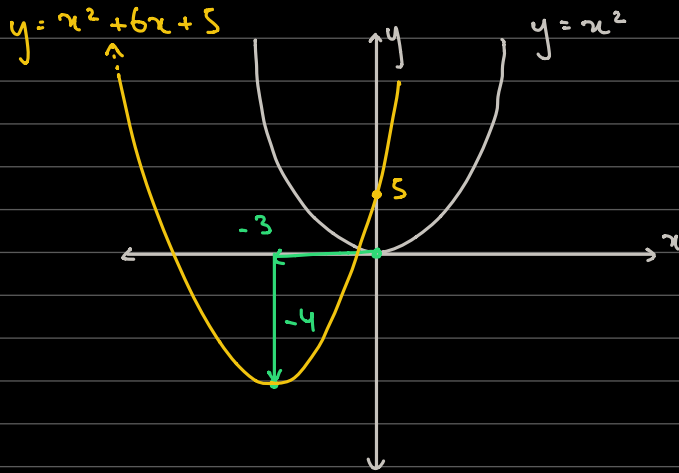
1.  $y = x^2$  is transformed to  $y = x^2 + 6x + 5$ . Describe the transformation in words.

Completing squares:

$$y = x^2 + 6x + 5$$

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

$-3 \rightarrow h$     $-4 \rightarrow k$     $\rightarrow$  starting point



The  $y = x^2$  is shifted -3 units in the x-axis and -4 units in the y-axis