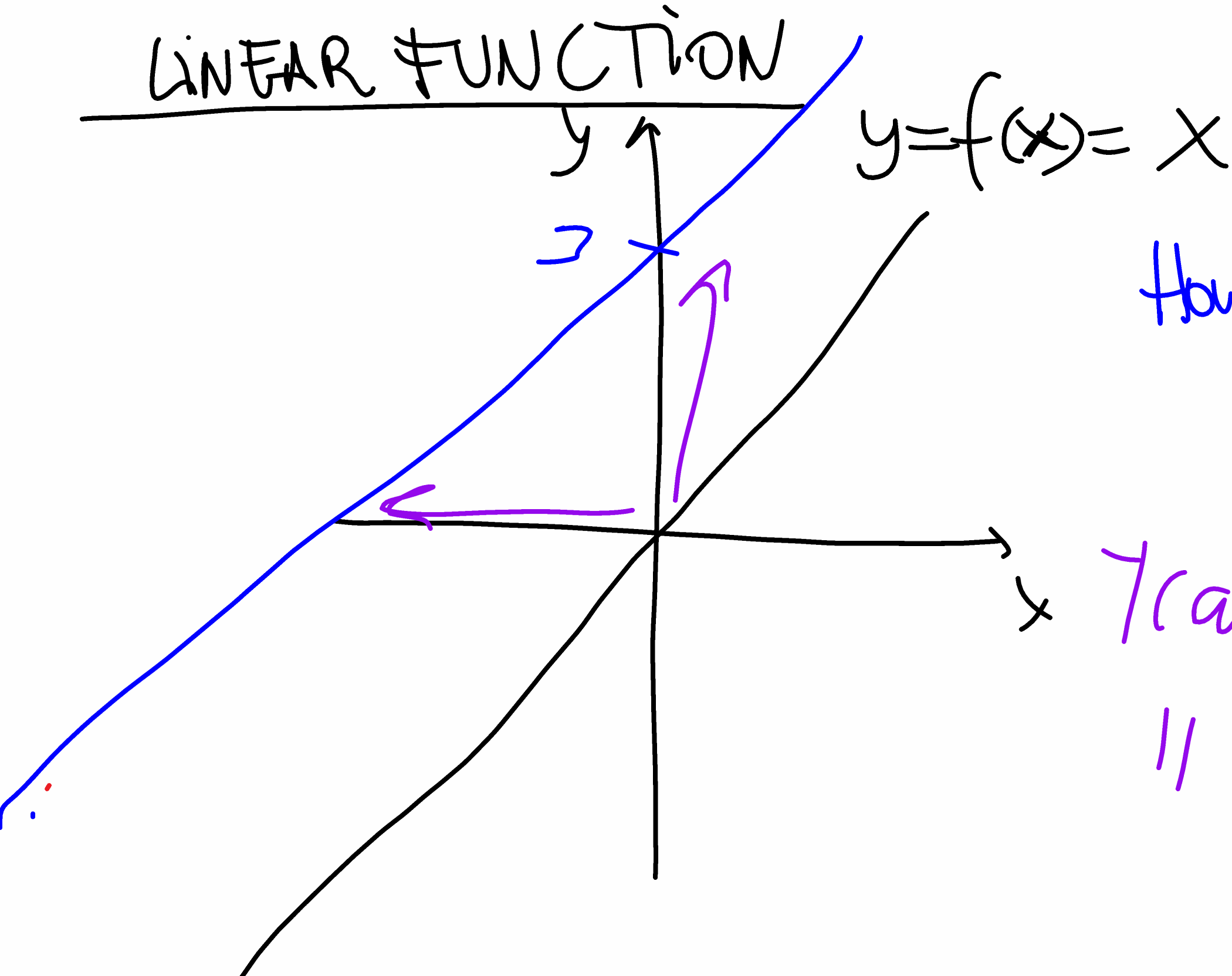


TRANSFORMATIONS OF FUNCTIONS

LINEAR FUNCTION



How does

$$g(x) = x + 3$$

$$g(0) = 3 \quad (0,3) \text{ is a point on } g$$

Translation 3 unit along y-axis up
// // along x-axis 3 units left

$$f(x) = x$$

$$g(x) = \boxed{x} - 2 \quad ?$$

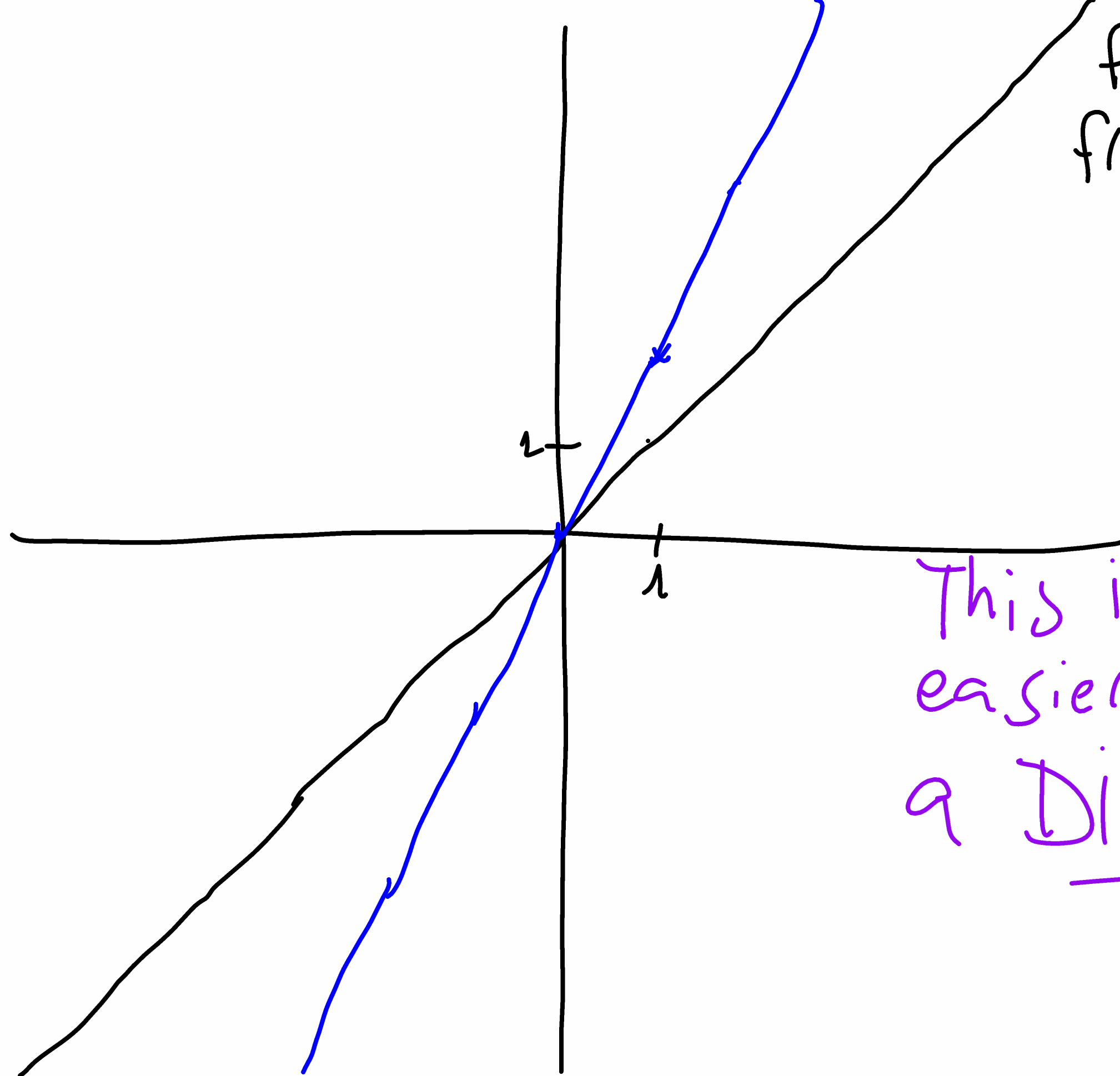
$$g(0) = -2$$

TRANSLATION

We can see this as a
translation along x-axis / right
" " " y-axis down

-2

2 units



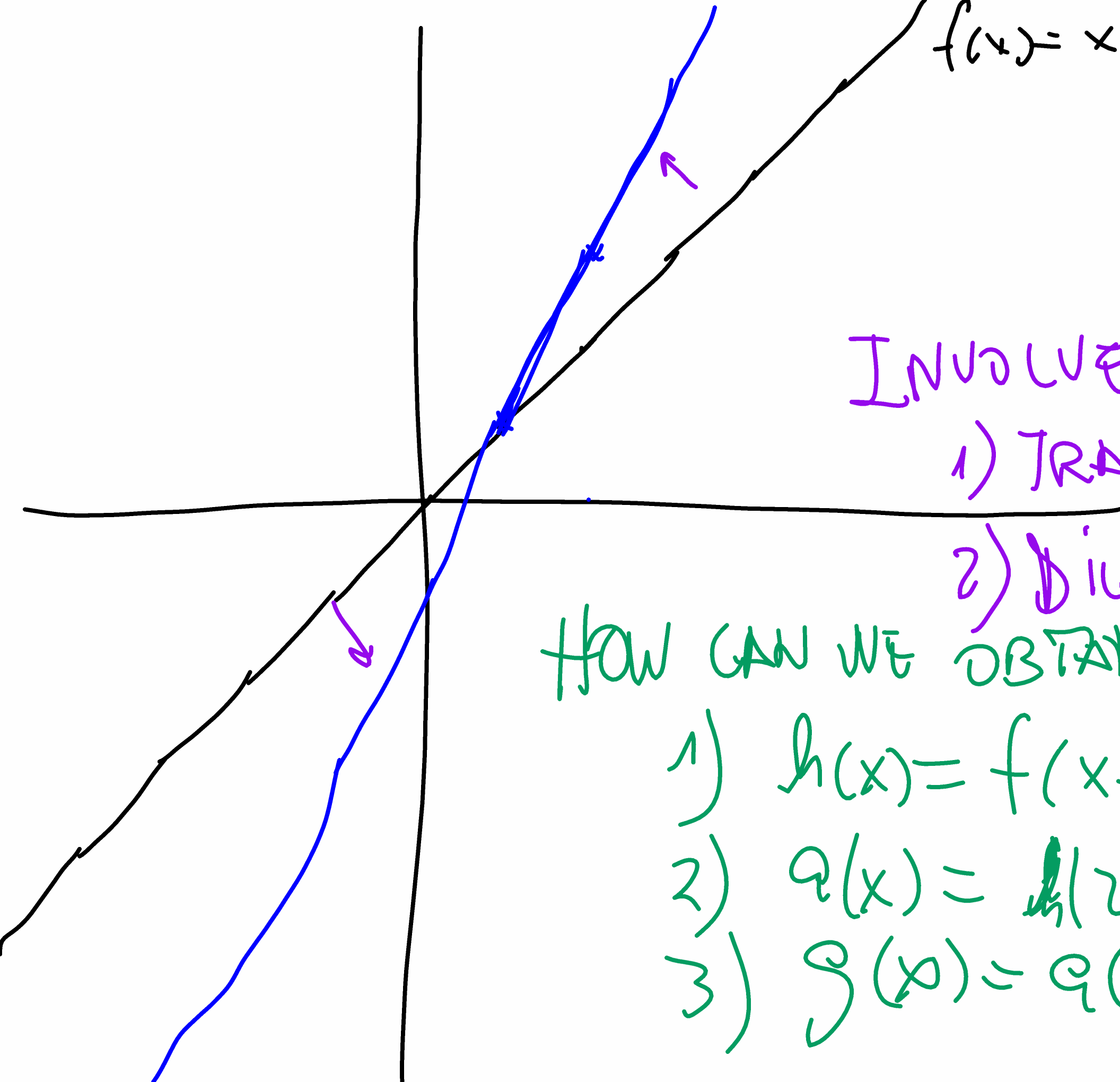
$$f(x) = \boxed{x}$$
$$f(1) = 1$$

$$g(x) = 2\boxed{x}?$$

$$g(0) = 0$$

$$g(1) = 2$$

This is a notation but it is
easier to express it as
a DILATION (means stretching or
shrinking)



$$f(x) = x$$

$$g(x) = 2(x-3) + 5$$

Plot in geogebra

INVOLVES

1) TRANSLATION

2) DILATION

HOW CAN WE OBTAIN $g(x)$ FROM $f(x)$?

1) $h(x) = f(x-3)$

2) $q(x) = h(2x)$

3) $g(x) = q(x) + 5$

$$g(1) = 1$$

$$g(2) = 3$$