3. [-9, 7]

4. [-2, 0]

$f(x) = 2(x+1)^{\frac{1}{3}} - 1$
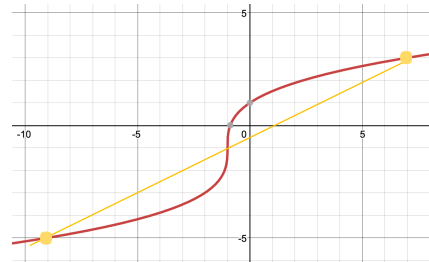
$f(x) = x^{\frac{1}{3}}$ ← original

Ok, so we know the original one is a cubic function.
We also know it is *stretched* and *shifted* to the left 1 *and* down 1.

Sweet, we have the function. Now what?

Well, you are trying to find the average rate of change over [-9,7] You can also say this as the change over -9 and 7.

Which means what?

It means the slope of the line between wherever (-9) on the x-axis is and 7 on the x-axis.

Isn't there an equation?

Sure there is. If you remember, the equation for slope is m=$\dfrac{y_2 - y_1}{x_2 - x_1}$

<u>For rate of change it is the same</u> but they term it m=$\dfrac{f(b) - f(a)}{b - a}$

How is that the same?

Remember that a function can also be written as an expression replacing the f(x) with "y" You can replace your interval numbers with the two x-values.

Let's make it easier and give them variables.

Same as cube root

a (or x_1) = -9 and **b (or x_2) =7.**   and **f(a) = 2(-9+1)$^{1/3}$ -1. f(b) = 2(7+1)$^{1/3}$ -1**

Can't I just find "y" on the graph?

YES   Either way, find your f(x) or "y" values and then plug them into the equation and ta-da!

$(-9, -5)$