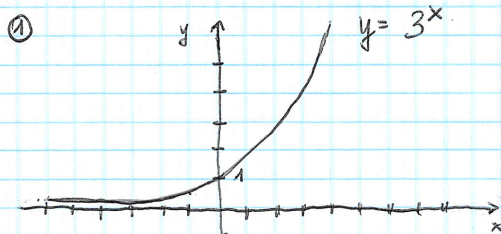


What to say in front of the blackboard - a brief tutorial

Exercise: Draw the graph of $y = |3^{x-1} - 3| - 1$ (each step separately)
State the domain and the co-domain of each function.

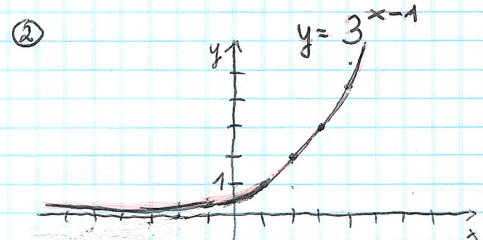
Martyna Oneszek

Solution:



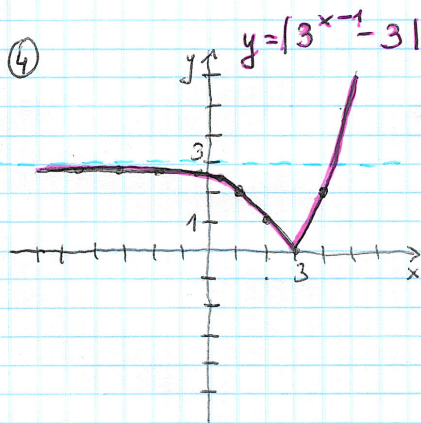
I start with an exponential function of $y = 3^x$.

$D_{y_1}: \mathbb{R}$
 $C_{y_1}: (0, +\infty)$



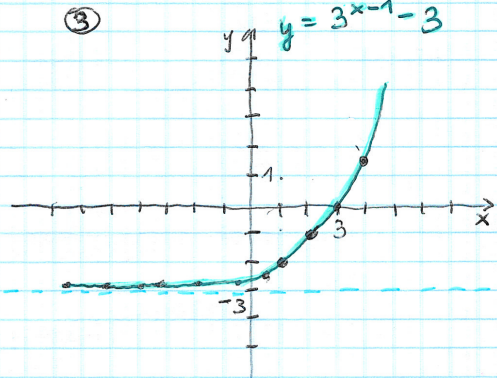
then, I move my previous graph by 1 to the right

$D_{y_2}: \mathbb{R}$
 $C_{y_2}: (0, +\infty)$



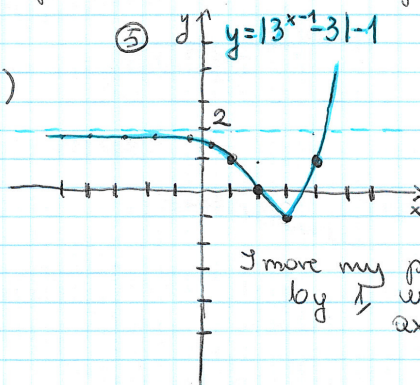
to obtain the absolute value, the negative part of the previous graph goes up

$D_{y_4}: \mathbb{R}$
 $C_{y_4}: [0, +\infty)$



I move my previous graph by 3 units down along axis OY

$D_{y_3}: \mathbb{R}$
 $C_{y_3}: (-3, +\infty)$



I move my previous graph by 1 units down along axis OY

$D_{y_5}: \mathbb{R}$
 $C_{y_5}: [-1, +\infty)$