

$$3.) f(x) = \frac{2x+1}{x-5}$$

sketch the graph

$$D(f) = \mathbb{R} - \{5\} \quad (x-5 \neq 0)$$

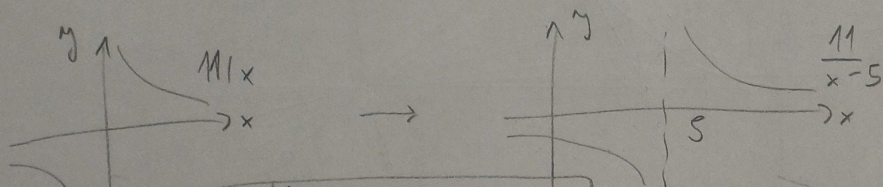
can sketch $f(x) = \frac{a}{bx+c} + d$ up-down shift

left-right shift

polynomial division:

$$f(x) = (2x+1) : (x-5) = 2 + \frac{11}{x-5}$$

$$\begin{array}{r} - (2x-10) \\ \hline 0 + 11 \end{array} \quad 2 \cdot (x-5) = 2x-10$$



shift

$$P_x: f(x) = 0$$

$$-2 = \frac{11}{x-5}$$

$$-2(x-5) = 11$$

$$x = -\frac{11}{2} + 5 = -\frac{1}{2}$$

$$P_x = \left[-\frac{1}{2}, 0\right]$$

$$P_y: f(0) = 2 + \frac{11}{-5} = -\frac{1}{5}$$

$$P_y = \left[0, -\frac{1}{5}\right]$$

