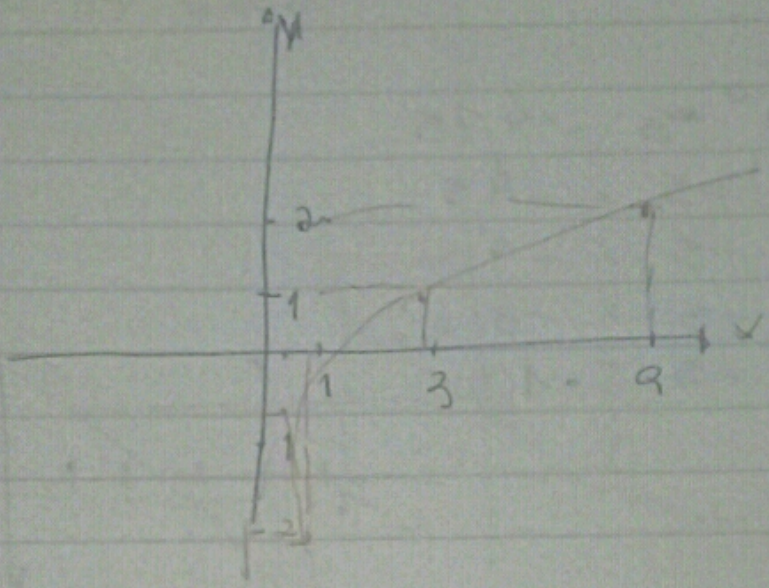
Tarefa Básica (Função Logarítma

(A) $y = \log_3 x$

$x = 3^y = z$

y	x
-2	$3^{-2} = (\frac{1}{3})^2 = \frac{1}{9}$
-1	3^{-1} $(\frac{1}{3}) = \frac{1}{3}$
0	$3^0 = 1$
1	$3^1 = 3$
2	$3^2 = 9$

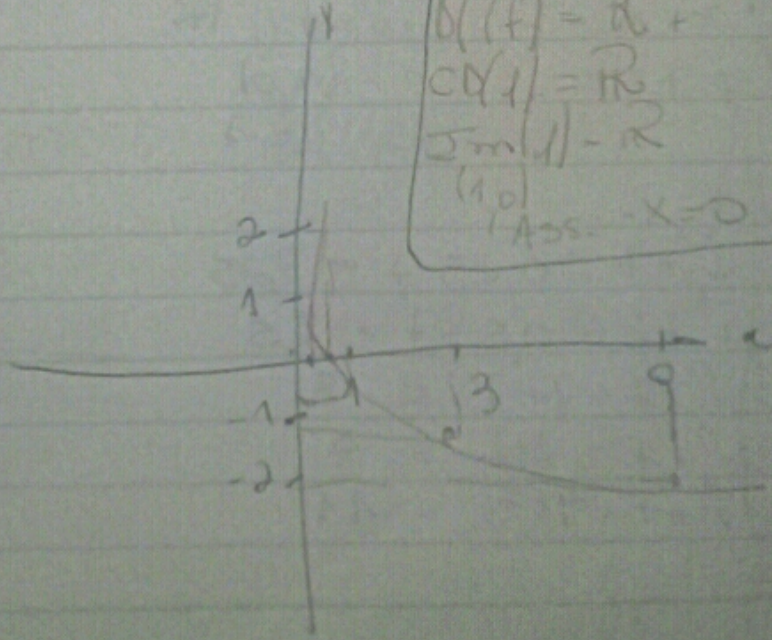


D(f) = $\mathbb{R}_+^*$
CD(f) = $\mathbb{R}$
Im(f) = $\mathbb{R}$
(1,0)
$x = 0$

(B) $y = \log_{\frac{1}{3}} x$

$(\frac{1}{3})^y = x$

y	x
2	$(\frac{1}{3})^2 = 3^2 = 9$
-1	$(\frac{1}{3})^{-1} = 3^1 = 3$
0	$(\frac{1}{3})^0 = 1$
1	$(\frac{1}{3})^1 = \frac{1}{3}$
2	$(\frac{1}{3})^2 = \frac{1}{9}$



D(f) = $\mathbb{R}_+^*$
CD(f) = $\mathbb{R}$
Im(f) = $\mathbb{R}$
(1,0)
Abs. $x = 0$

c) $y = \log_2(x+5)$

$D(f) = \{x \in \mathbb{R} / x > -5\}$

$CD(f) = \mathbb{R}$

$Im(f) = \mathbb{R}$

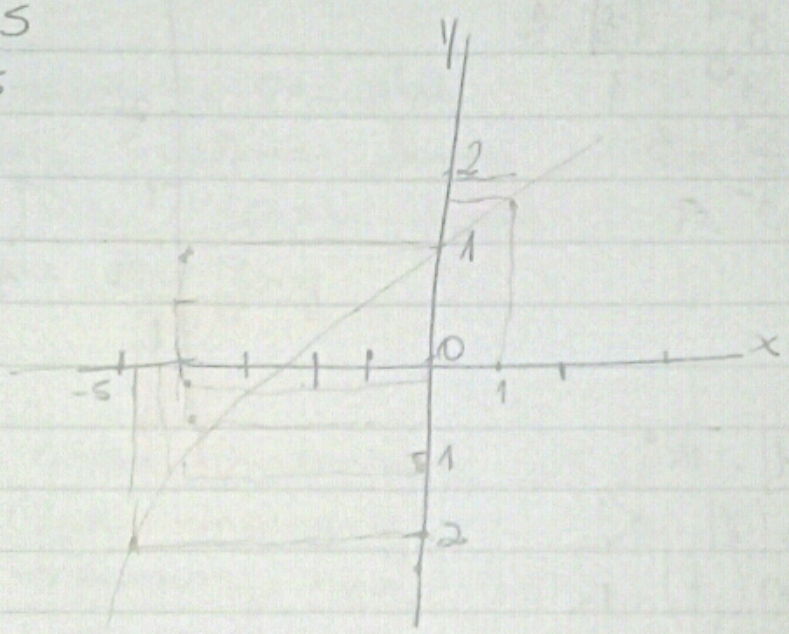
$(-4,0)$

Ass: $x = -5$

$2^y = x+5$

$2^y - 5 = x$

y	x
-2	$2^{-2} - 5 = -4{,}75$
-1	$2^{-1} - 5 = -4{,}5$
0	$2^0 - 5 = -4$
1	$2^1 - 5 = -3$
2	$2^2 - 5 = -1$



d) $y = \log_2(x-7)$ $D(f) =]7; +\infty[$

$CD(f) = \mathbb{R}$

$Im(f) = \mathbb{R}$

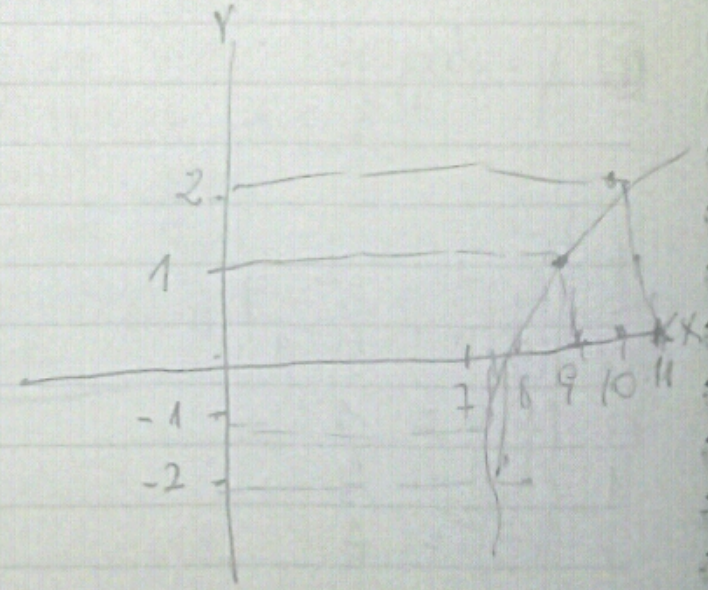
$(8,0)$

Ass. $x = 7$

$2^y = x - 7$

$2^y + 7 = x$

y	x
-2	$2^{-2} + 7 = 0{,}25 + 7 = 7{,}25$
-1	$2^{-1} + 7 = 0{,}5 + 7 = 7{,}5$
0	$2^0 + 7 = 1 + 7 = 8$
1	$2^1 + 7 = 2 + 7 = 9$
2	$2^2 + 7 = 4 + 7 = 11$



e) $y = \log_{\frac{1}{4}}(x+1)$ $\quad D(f) =]-1, +\infty[$

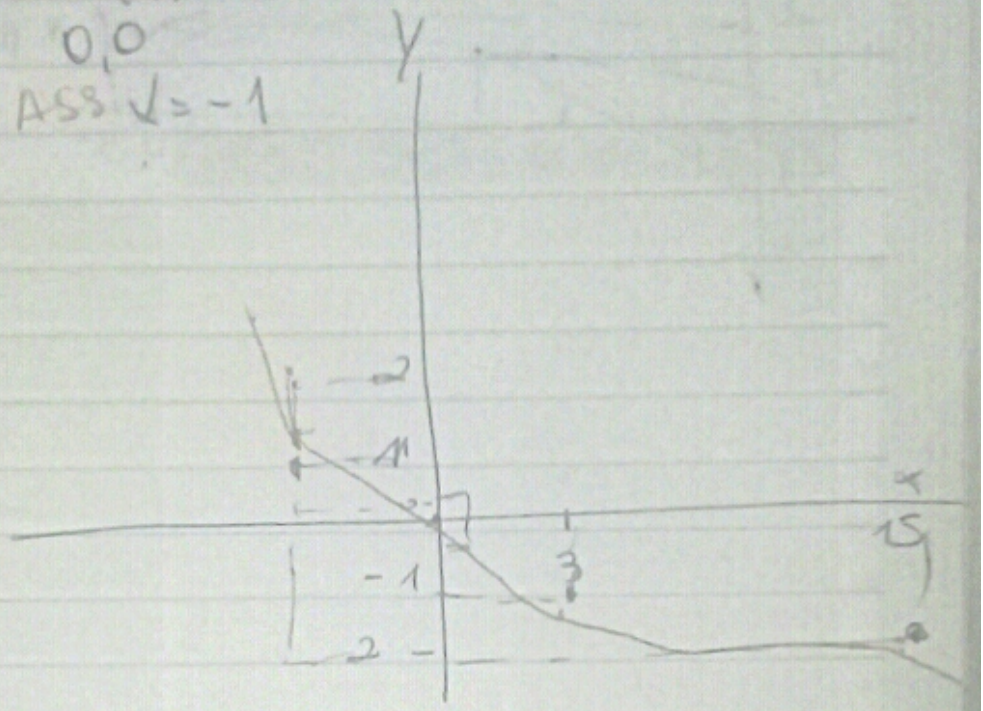
$\left(\frac{1}{4}\right)^y = x+1$ $\quad Cd(f) = \mathbb{R}$

$\left(\frac{1}{4}\right)^y - 1 = x$ $\quad Im(f) = \mathbb{R}$

0,0

Ass $y = -1$

y	x	
-2	15	$\left(\frac{1}{4}\right)^{-2} - 1$
-1	3	$\left(\frac{1}{4}\right)^{-1} - 1$
0	0	$\left(\frac{1}{4}\right)^{0} - 1$
1	0,75	$\left(\frac{1}{4}\right)^{1} - 1$
2	-0,6	$\left(\frac{1}{4}\right)^{2} - 1$
	16	



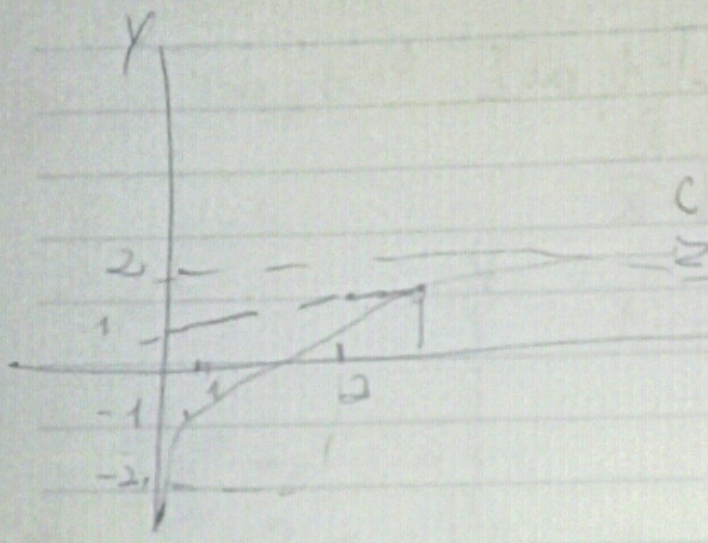
f) $y = \log_{10}(5x-2)$

$10^y = 5x - 2$

$\frac{10^y + 2}{5} = x$

y	x	
-2	0,4	$\frac{10^{-2}+2}{5} = 0,4$
-1	0,4	
0	0,6	$\frac{10^{0}+2}{5} = 0,6$
1	2,4	$\frac{10^{1}+2}{5} = 2,4$
2	20,4	$\frac{10^{2}+2}{5} = 20,4$

$\frac{10^{-1}+2}{5} = 0,4$



$D = \mathbb{R} \setminus \{2/5\}$

$CD = \mathbb{R}$

$\mathrm{Im} f = \mathbb{R}$ /0,6

$f(x) = 0$

$x = 0$

Asymptote $x = 2/5$