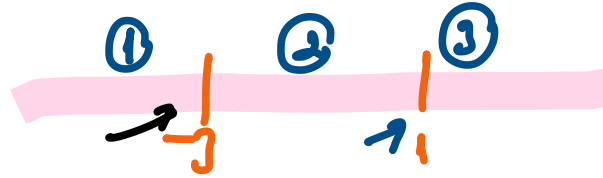


2.6. HW Q14

For what values of  $a$  and  $b$  is  $f(x)$  conti. at ARN?

$$f(x) = \begin{cases} -7, & x \leq -3 \rightarrow \textcircled{1} \\ ax-b, & -3 < x < 1 \rightarrow \textcircled{2} \\ 3, & x \geq 1 \rightarrow \textcircled{3} \end{cases}$$



transm. / sus p.  $x = -3, 1$

$$\begin{aligned} (-1) \times -3a - b &= -7 \\ 3a + b &= 7 \end{aligned}$$

@  $x = -3$

1)  $f(-3) = -7$

2)  $\lim_{x \rightarrow -3} f(x)$  — LC:  $\lim_{x \rightarrow -3^-} f(x) = \lim_{x \rightarrow -3^-} (-7) = -7$

— RL:  $\lim_{x \rightarrow -3^+} f(x) = \lim_{x \rightarrow -3^+} (ax-b) = a(-3) - b = -3a - b$

3)  $f(-3) = \lim_{x \rightarrow -3} f(x)$  }  $-7 = -7 = -3a - b$

@  $x = 1$

1)  $f(1) = 3$

2)  $\lim_{x \rightarrow 1} f(x) = \lim_{x \rightarrow 1} (ax-b) = a - b$

$\lim_{x \rightarrow 1} f(x) = 3$

3)  $f(1) = \lim_{x \rightarrow 1} f(x) \Rightarrow 3 = a - b = 3$

$\frac{5}{2} - b = 3$

$3a + b = 7$

Q4  
Q9

$$\frac{+a - b = 3}{4a = 10} \Rightarrow a = \frac{10}{4} = \frac{5}{2}$$

$$4a = 10 \Rightarrow a = \frac{10}{4} = \frac{5}{2}$$

$$b = -\frac{1}{2}$$