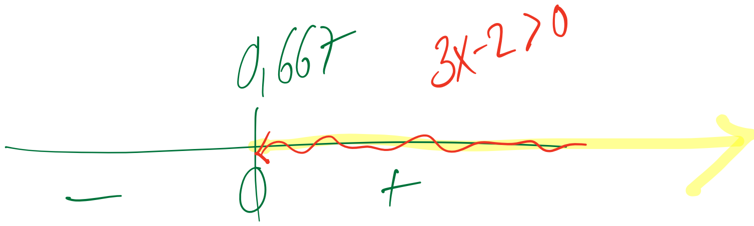
$\log_3(3x-2)$ $\quad\quad$ $\boxed{\log_3 A \text{ existe}} \Leftrightarrow A>0$

Il faut : $3x-2>0$

Signe de $3x-2$: $\quad$ $3x-2=0$ / $x=\frac{2}{3}\simeq 0{,}667$



$3\cdot 0-2=-2<0$

$\Rightarrow \log_3(3x-2)$ existe si $x>0{,}667\simeq \frac{2}{3}$

$D_f = \left]\frac{2}{3} ; +\infty\right[$

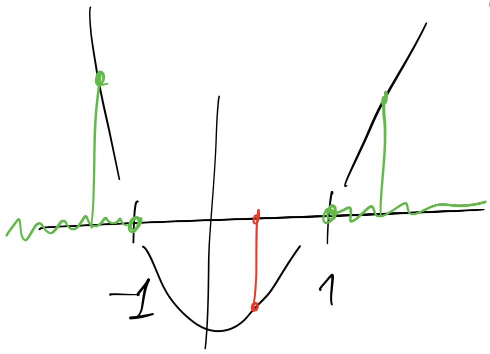
$\boxed{43 \quad b)}$

$\ln\left(x+\sqrt{x^2-1}\right)$ existe $\Leftrightarrow$ $x+\sqrt{x^2-1} > 0$

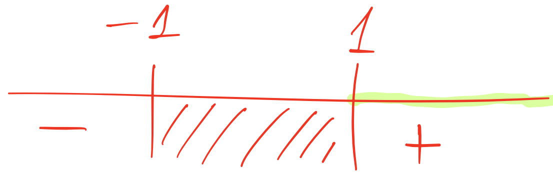
$ED\left(x+\sqrt{x^2-1}\right)$

signe

$\sqrt{x^2-1}$ existe



$x \in \left]-\infty ; -1\right] \cup \left[1 ; +\infty\right[$



$x+\sqrt{x^2-1} = 0$

$D\left(\ln\left(x+\sqrt{x^2-1}\right)\right) = \left[1 ; +\infty\right[$

$\sqrt{x^2-1} = -x$

$()^2$

$x^2-1 = x^2$

$-1 = 0$ Bs de zeros

$$\log_2\left(\sqrt[5]{2}\right) = \log_{2^1}\left(2^{\frac{1}{5}}\right) = \frac{1}{5}\log_2(2)$$

2^t $\qquad (2^1)^? = 2^{\frac{1}{5}}$ $\qquad 1$ $\qquad$ 4 form.

$$\log_{2^3}\left(2^{\frac{1}{5}}\right) = \frac{1}{5}\log_{2^3}(2) = \frac{1}{5}\cdot\frac{1}{3}$$

$$\left(2^3\right)^{\frac{1}{3}} = 2$$

$$\log_{2^u}(2) = \frac{1}{u}$$

$$\log_{\sqrt{2}}\left(2^3\right) = \log_{2^{\frac{1}{2}}}\left(2^3\right) = 3\log_{2^{\frac{1}{2}}}2^1 = 3\cdot 2$$

$$\left(2^{\frac{1}{2}}\right)^2 = 2$$