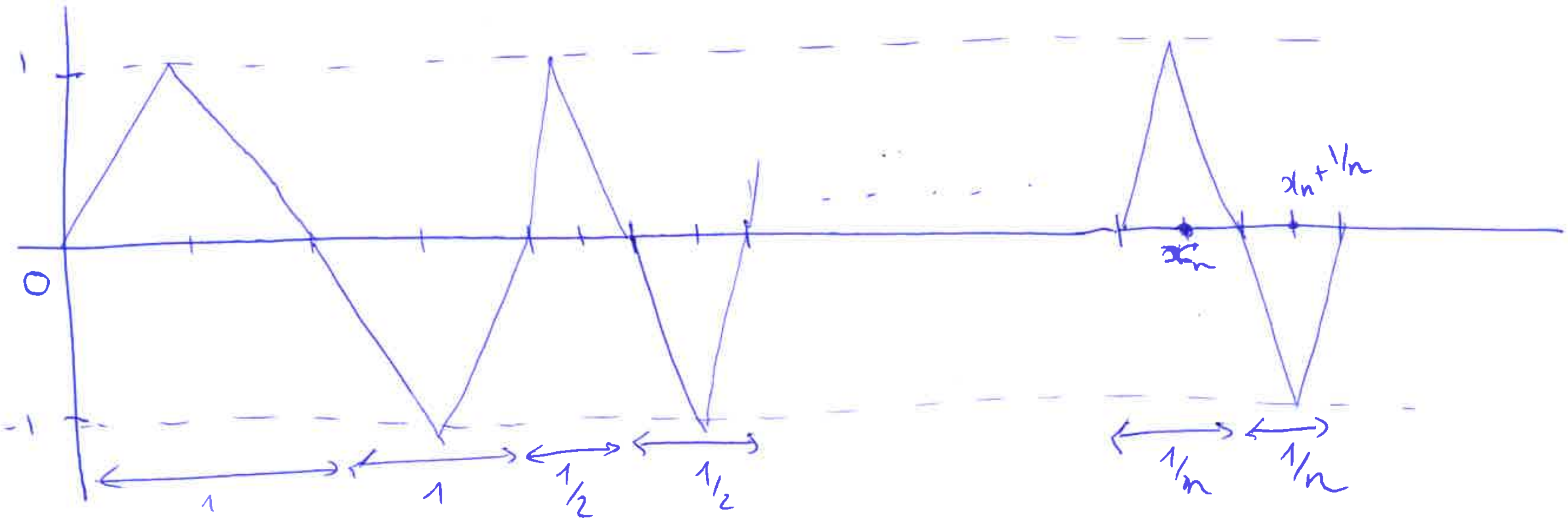
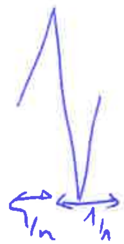
Let f be the following application



Let x_n be the abscisss of the top of the pattern 

: then $f(x_n) = 1$ and $f(x_n + \frac{1}{n}) = -1$.

Let $f_n = f$.

Let $g_n : x \mapsto f_n(x + \frac{1}{n}) = f(x + \frac{1}{n})$. $(f_n)_{n \geq 0}$ converges uniformly to f (as $f_n = f$) but

$\forall n \geq 1$, $|g_n(x_n) - f_n(x_n)| = |f_n(x_n + \frac{1}{n}) - f_n(x_n)| = |-1 - 1| = 2.$

Hence g_n doesn't uniformly converges to f.