

## Exercises

E15.2 [1BX] Let's go back to the exercise [OFP]: computing the Cauchy product of the series  $\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{\sqrt{n}}$  with itself, produces the series  $\sum_n (-1)^n c_n$  with  $c_n = \sum_{k=1}^{n-1} \frac{1}{\sqrt{k(n-k)}}$ ; show that  $c_n \rightarrow \pi$ .

**Solution 1.** [1BY]