(ASV Exercise 9.4)

The European style roulette wheel has the following probabilities:

- a **red** number appears with probability $\frac{18}{37}$
- a **black** number appears with probability $\frac{18}{37}$
- a **green** number appears with probability $\frac{1}{37}$

Ben bets exactly \$1 on black each round (i.e. he wins \$1 if a black number appears, and loses \$1 otherwise). Is this a good long-term strategy?