Problem. (*American Mathematical Monthly*, March 2004. Problem 11068, proposed by Herbert Wilf, University of Pennsylvania.) For a rational number \( x \) that equals \( a/b \) in lowest terms, let \( f(x) = ab \).

(a) Show that

\[
\sum_{x \in \mathbb{Q}^+} \frac{1}{f(x)^2} = \frac{5}{2},
\]

where the sum extends over all positive rationals.

(b) More generally, exhibit an infinite sequence of distinct rational exponents \( s \) such that \( \sum_{x \in \mathbb{Q}^+} f(x)^{-s} \) is rational.