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For integers  $p$  and  $q$ , we obtain the representaions of the following extended Euler sums

$$\sum_{n=1}^{\infty} \frac{1}{n^q} \sum_{r=1}^{kn} \frac{1}{r^p}, \quad \sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{n^q} \sum_{r=1}^{kn} \frac{1}{r^p}, \quad \sum_{n=1}^{\infty} \frac{1}{n^q} \sum_{r=1}^{kn} \frac{(-1)^{r-1}}{r^p}, \quad \sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{n^q} \sum_{r=1}^{kn} \frac{(-1)^{r-1}}{r^p}$$

in terms of the Riemann zeta function and the Hurwitz function when  $p + q$  is odd. If  $p + q$  is even, these sums are also expressed in terms of the Riemann zeta function. (Received February 11, 2011)