m3hprob8.tex

## M3H PROBLEMS 8. 6.3.2018

Q1 *(Fundamental Theorem of Arithmetic, FTA)*.
Every integer $n \geq 2$ can be written uniquely (to within order) as a product of prime factors.

Q2 (*Basel problem: Leonhard Euler (1707-1783) in 1735*).

$$\zeta(2) := \sum_{n=1}^{\infty} 1/n^2 = \pi^2/6.$$

Euler used real methods. You may find it easier to use (i) Fourier Analysis, or (ii) Complex Analysis (details on my M2P3 or M3P16 websites).

NHB