Problem 7 (due Monday, May 6)

Prove that for every $n\geq 1$ the number $$\frac{(1^2+2^2+\ldots + n^2)!}{(1!)^2\cdot(2!)^3\cdot(3!)^4\cdot\ldots \cdot(n!)^{n+1}}$$ is an integer.

We received only one solution, from Sasha Aksenchuk. For a complete solution see the following link Solution.