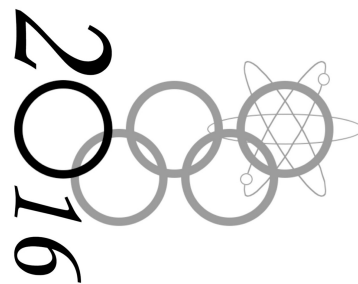


**Team****Rank**

## Fermi Questions

- |    |  |                      |                   |
|----|--|----------------------|-------------------|
| 1  | How many protons, neutrons and electrons are there in an atom of manganese?  | <input type="text"/> |                   |
| 2  | What is the volume of a silver atom?   | <input type="text"/> | m <sup>3</sup>    |
| 3  | What is the sum of the heights of all the participants of all the Liverpool Physics Olympics?                                | <input type="text"/> | m                 |
| 4  | What is the combined mass of 25 nanoparticles each comprising 25 silver atoms?   | <input type="text"/> | kg                |
| 5  | What is the mass of air inside an LPO mug?   | <input type="text"/> | kg                |
| 6  | What is the resistance of a silver wire that is 25m long and 25mm in diameter?   | <input type="text"/> | Ω                 |
| 7  | What is the density of metallic silver?  | <input type="text"/> | kg/m <sup>3</sup> |
| 8  | How many atoms are there in 25 silver medals from the Rio 2016 Olympics?   | <input type="text"/> |                   |
| 9  | A radioactive silver source has a half-life of 40 days. If the mass of silver was 1g during LPO 2012, what mass now remains? | <input type="text"/> | μg                |
| 10 | What power is required to heat 25kg of water by 25K in 25s?  | <input type="text"/> | W                 |
| 11 | What is the combined kinetic energy of 25 apples dropped from rest from a height of 1m?                                      | <input type="text"/> | J                 |
| 12 | What is the potential energy due to the electrostatic repulsion between all of the protons in a silver nucleus?              | <input type="text"/> | J                 |
| 13 | What is the deBroglie wavelength ( $\lambda=h/p$ ) of a silver atom moving at 25m/s?   | <input type="text"/> | m                 |
| 14 | How many people were in the Beatles?   | <input type="text"/> |                   |