Team	
Rank	

## LIVERPOOL PHYSICS OLYMPICS

## Fermi Questions

1	What is the gravitational force between the atoms in a deuterium molecule?	N
2	How many miles are there in a light-year?	
3	How many human heart beats occur in a year across the world?	
4	What fraction of the Sun's energy output is intercepted by the Earth?	
5	How many molecules are there in the air inside an LPO mug?	
6	If the bacterium Physica Olympicum divides into two every 5 minutes, how many bacteria will there be after a day if none die?	
7	What is the volume of a gold nucleus?	$m^3$
8	What is the volume of the Moon?	$m^3$
9	What is the mass of the Earth's atmosphere?	kg
10	What is the absolute temperature at which hydrogen boils divided by the temperature at the core of the Sun?	
11	How many humpback whales would be needed to balance a set of scales with a Saturn V rocket on the other side?	
12	What is the momentum of a fully laden Boeing 747 jet at cruising speed?	kg m/s
13	How many wavelengths of visible laser light fit into the distance between the Earth and the Moon?	
14	How many people were in the Beatles?	