

Problem Set

1. The sun produces 3.8×10^{27} joules of energy per second. How much energy is produced in a year? (Note: a year is approximately 31,000,000 seconds).
2. On average, Mercury is about 57,000,000 km from the sun, whereas Neptune is about 4.5×10^9 km from the sun. What is the difference between Mercury's and Neptune's distances from the sun?
3. The mass of Earth is approximately 5.9×10^{24} kg, and the mass of Venus is approximately 4.9×10^{24} kg.
 - a. Find their combined mass.
 - b. Given that the mass of the sun is approximately 1.9×10^{30} kg, how many Venuses and Earths would it take to equal the mass of the sun?