Answer on question #54928, Physics / Astronomy — Astrophysics

Question Problem: 1. Consider a 2 M neutron star. The mass of a neutron is 1.67×10^{24} g, and 1 M = 2 10^{33} g.(i) How many neutrons are in this neutron star? (1 point)
A. $6.0 \times 10^{2}3$ neutrons
B. $1.2 \times 10^{2}3$ neutrons
C. $1.2 \times 10^{5}7$ neutrons
D. $2.4 \times 10^{5}7$ neutrons
E. 6.7×10^{9} neutrons

Solution Number of neutrons is

$$N = \frac{M_{star}}{m_{neutron}} = \frac{2 \cdot 2 \cdot 10^{33}}{1.67 \cdot 10^{-24}} \approx 2.4 \times 10^{57}$$

Answer is D.