

Answer on Question#54509 – Physics – Mechanics – Kinematics – Dynamics

Question. The gravitational field strength of Jupiter is 22.9 N/kg. An astronaut weighs 1200 N on Earth. What will his weight on Jupiter be?

Solution. Noting that the gravitational field strength of Earth is 9.8 N/kg we find the mass of astronaut: $m = \frac{P_E}{g_E} = \frac{1200}{9.8} \approx 122.45$ kg. Then we find his weight on Jupiter:

$$P_J = mg_J = 122.45 \cdot 22.9 \approx 2804 \text{ N.}$$

Answer. 2804 N.