

Answer on Question #64025-Physics-Other

Calculate the speeds of a 1500 N Sumo Wrestler and a 500 N Olympic diver when they hit the water after diving from 10 meters.

Solution

The final speed will not depend on the mass. For either one, the kinematic equation is

$$v_f^2 - v_i^2 = 2gh$$

v_f is final speed; $v_i = 0$ is initial speed (assuming they dive from rest).

$$v_f^2 = 2gh$$

$$v_f = \sqrt{2gh} = \sqrt{2 \cdot 9.8 \cdot 10} = 14 \frac{m}{s}$$

Answer: $14 \frac{m}{s}$.

Answer provided by <https://www.AssignmentExpert.com>