Vertical Jump Velocity Estimation

A simple calculation to estimate the acceleration and final velocity of a human performing a vertical jump.

Assuming:

70kg	mass
1500 N	Jump force (average force over duration)
0.3 second	duration

Equations:

Force = Mass * Acceleration

Acceleration = Force/Mass
Velocity = Acceleration * Time

Calculation:

A = 1500N / 70Kg
A = 21 m/ss

V = 21 m/ss * 0.3s
V = 6 m/s

Conclusion:

A 70Kg human can reach a velocity of 6 m/s at the time they leave the ground. This is sufficient velocity to escape the gravity of the Mars moon of Deimos.