NEWTON'S 2ND LAW & KINEMATICS Units 6 & 7 and some 4 & 5

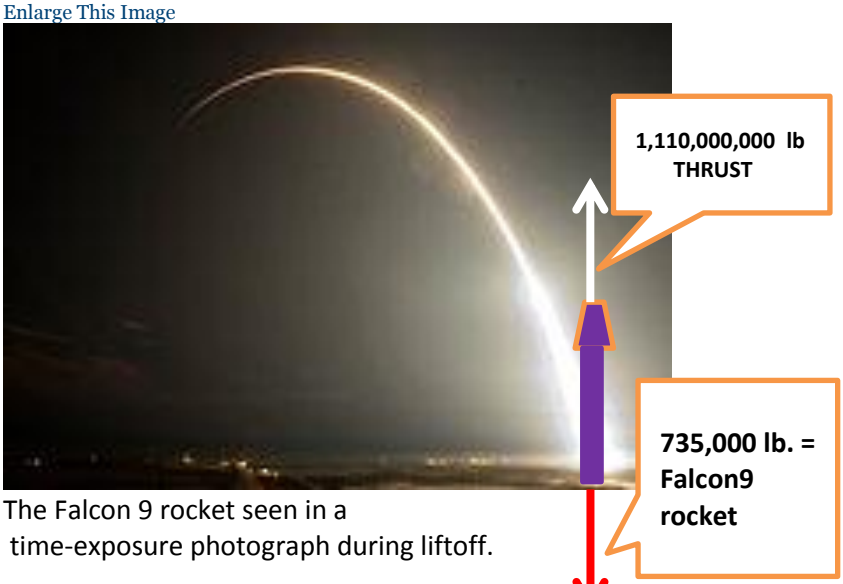
Dr. John P. Cise, Prof. of Physics, Austin Com. College, 1212 Rio Grande St., Austin Tx. 78701 & NYTimes 5/22/12 by Ken Chang

---

Big Day for a Space Entrepreneur Promising More

CAPE CANAVERAL, Fla. — He does not have the name recognition of some other space entrepreneurs, people like Richard Branson, the founder of the Virgin empire, or Paul Allen of Microsoft fame, or Jeff Bezos, the Amazon.com billionaire.

Enlarge This Image



The Falcon 9 rocket seen in a time-exposure photograph during liftoff.

QUESTIONS: (a) Find mass(in slugs) of Falcon9 Roket? (b) Find resultant net force on falcon9 at time of launch? (c) Using Newton's 2nd law to find acceleration(in ft/s^2) at launch time? (d) Find the velocity(in ft/s and mph) of Falcon9 170 s after launch?

HINT: W = mg , g = 32 ft/s^2 , 60 mph = 88 ft/s

ANSWERS: (a) 22,969 slugs, (b) 375,000 lb., (c) 16 ft/s^2 (d) 2720 ft/s or 1856 mph

That will probably change if things keep going his way. Elon Musk, a computer prodigy and serial entrepreneur whose ambitions include solving the world's energy needs and colonizing the solar system, was the man of the hour — or of 3:44 a.m. Tuesday, Eastern time — when the rocket ship built by his company, SpaceX, lifted off gracefully in a nighttime launching and arced off in a streak of light amid loud applause. "Falcon flew perfectly!!" Mr. Musk posted exultantly on Twitter from his iPhone at 4:04 a.m. "Dragon in orbit, comm locked and solar arrays active!! Feels like a giant weight just came off my back :)" If all goes as planned, his **unmanned Dragon capsule, lifted into orbit by his Falcon 9 rocket,** will berth at the International Space Station on Friday bearing a modest cargo: 162 meal packets (45 of them low-sodium), a laptop computer, a change of clothes for the station astronauts and 15 student experiments.