

Name: _____

Period: ____ Subject: Int. Science

Date: _____

Force, mass, and acceleration

Remember: For the word problems, circle the important numbers and underline the “question” part to help you figure out which equation to use and which part of the equation each thing is!

1. What is Newton’s 2nd Law? (In equation form!!)
2. What are the units for “force”? (give both the word and the abbreviation)
3. How much force does it take to make a rocket accelerate 12 m/s^2 if the rocket has a mass of 50,000 kg?
4. A super secret spy guy has a jetpack that helps him to fly. Super secret spy guy has a mass of 85 kg. How much force will it take for him to overcome gravity (9.8 m/s^2) and fly?
5. What are the units of acceleration (both words and abbreviation!)?

6. Super skater Jan Crashinsoon attaches a rocket packet to his ice skating outfit. If he has a mass of 80 kg and the rocket generates a force of 360 N, what will Jan's acceleration be?

7. Arnie Gosofas puts a new engine in his car. The car has a mass of 2500 kg and this engine can generate up to 8750 N of force. Theoretically, how much acceleration could Arnie get from his car?

8. What are the units of weight (both the word for the units *and* the abbreviation)?

9. The circus is looking for a new human cannonball. The cannon needs to be able to accelerate the person 10 m/s^2 to overcome gravity, and the cannon only generates 750 N of force. What is the largest mass a person could have and still be shot out of the cannon?.

10. What is the mass of a pet armadillo that weighs 200 N (on Earth)?