1. How much tension force must a rope withstand if Hodgins uses it to accelerate a 1050 kg car horizontally at 1.2 ? (Ignore friction)
2. Booth got a new toy! The net horizontal thrust of his new jet-powered supersonic land vehicle, which accelerates at 7 *g*’s, is 4,000 N. (1 g would be an acceleration of 9.8 )
3. What is the vehicle’s mass?
4. If the vehicle above starts at rest, and accelerates as described for 3.0 s, how fast will it be going at the end of the 3.0 seconds?
5. How far will the vehicle have traveled at the end of the 3.0 seconds?
6. Angela watches a pinecone with a mass of 10.0 grams fall off a tree (yes, there is some biology…)
   1. At one instant during its fall it has an acceleration of 6.0 . What is the force of air drag on the pinecone at that instant?
   2. What is the force of air drag when the pinecone reaches terminal velocity?
7. Daisy is riding in a horse drawn carriage. The horse pulls a 105 kg cart with a net force of 300. N for 5.00 seconds.
8. What is the acceleration of the carriage?
9. What was the average speed of the carriage during the 5.00 seconds?
10. How far did it travel during that time?
11. Brennan and Booth are in a wheelbarrow race! Booth pushes the wheelbarrow so it accelerates at 3.00 for a distance of 100. m:
12. How much time was required to travel the 100. m?
13. If he pushed it with 120. N of net force, what was the mass of the wheelbarrow?
14. How fast was it going at the end of the 100. m?
15. Lance drives a race car initially going 10. He hits the gas so that a constant 1,600 N of net force is applied to the car. It speeds up to 175 in 4.0 seconds.
16. What is the car’s acceleration?
17. What is the car’s mass?
18. How far did it travel during the 4.0 second period?