





4. A 3.00 kg cart on a frictionless track is pulled by a string so that it accelerates at 2.00 m/s/s. What is the tension in the string?

5. A 70.0 kg skydiver falls towards the earth. If the force due to air resistance is 0 N, what is the acceleration of the skydiver?

6. The skydiver in problem 5 opens her chute. The force due to air resistance is now 1200 N. What is the acceleration of the skydiver?

7. A 0.500 kg model rocket is initially pushed upwards by a thrust force of 15 N. If the force of air resistance is 1.00 N, what is the initial acceleration of the rocket?

Bonus - A man pushes his child in a grocery cart. The total mass of the cart and child is 30.0 kg. If the force of friction on the cart is 15.0 N, how hard does the man have to push so that the cart accelerates at 1.50 m/s/s.