

Force and motion

1. A car with a mass of 2 kg accelerates at 25 m/s/s. If it hits an orange cone on the side of the road what is the force with which it hits the cone?
2. Which has more force a car with a 2kg mass and 30 m/s/s acceleration or a 4kg truck with a 15 m/s/s acceleration?
3. If I want to move a shopping cart from point A to point B as fast as I can I will select an empty shopping cart. Why?
4. If a full shopping cart gets loose and rolls down a hill it will be harder to stop than an empty cart. Why?
5. What force will an object with a .5 kg mass strike the ground if it falls off the table?

6. An alien spaceship drops in front of you and stops. It then speeds off backwards zooms straight up and stops again. How many times did it change velocity ? Describe each time.

7. Which creates stronger gravitational pull earth or the moon? Does your answer change if you are an astronaut standing on the moon? Where do you weight more?

8. How does gravity change as I climb a mountain? How does gravity change as I descend into the grand canyon?

9. If I drop 2 identical bowling balls , one from 10 meters one from 20 meters will they hit the ground with the same force? Will they be going the same velocity?

10. Which bowling ball will hurt the most? Do you thing force is the only factor in an impact?