

Problem 1: You are running late so you put your coffee in your car's cup holder and start the car. You speed up and suddenly, a cat crosses your way. You hit the brakes and you notice that your coffee spills. Why is that?

For numbers 2 and 3: You push a heavy box that sits on a smooth floor and it accelerates.

Problem 2: If you apply thrice the net force, what will happen to the acceleration?

Problem 3: What will happen if you apply the same force on the same box, but it slides on a very rough floor?

For numbers 4 and 5: A high-speeding car and a bug have a head-on collision.

Problem 4: Which imparts a greater force upon the other?

Problem 5: Which experiences a greater acceleration?