

Velocity and acceleration recall questions

1. What can change the velocity of a object? A resultant force acting on the object.
2. Write down the equation which links resultant force, mass and acceleration. $F = ma$
3. A force of 2000 N act on a car of mass 800 kg.
Calculate the acceleration of the car.
4. What does Newton's Third Law say about interacting forces on an object? They are equal and opposite.
5. For a vehicle, stopping distance = thinking distance + braking distance
6. What is the typical range of reaction times for a person? **0.2 s to 0.9 s**
7. Say one good and one negative thing about the ruler drop test to measure reaction times. **Fast, convenient but may lead to error.**
8. Say four things that increase driver reaction time. **Drinking alcohol, taking drugs, tiredness, distractions.**
9. Say three things that increase braking distance. **Adverse weather (ice, snow), bald tyres, faulty brakes.**
10. Say two reasons braking to an emergency stop be dangerous? **Lose control and skid, brakes overheat.**

Velocity and acceleration application questions

1. What is inertia?
2. What is the definition for inertial mass?
3. What are the Maths symbols for proportional to and for approximate?
4. Describe the forces and energy changes involved in braking.