

$M$  = how difficult it is to accelerate.  
 inertia

Newton's 2nd law.

Famous eqn

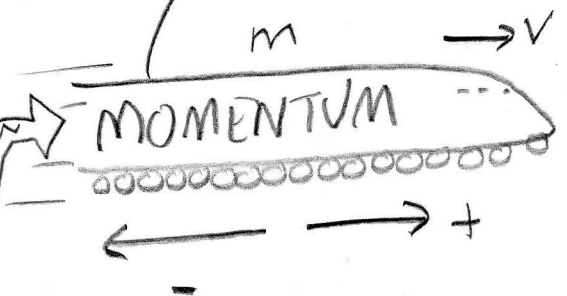


Momentum = mass x velocity  
 kg m/s       $kg \times m/s$

R-P see sep sheet

Force = mass x acceleration.

$a \propto F$   
 $a \propto \frac{1}{m}$   
 inversely proportional

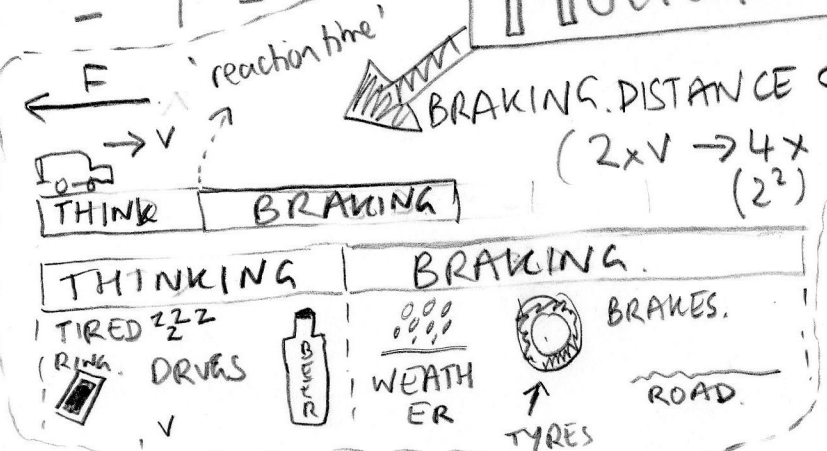


e.g. Falling.

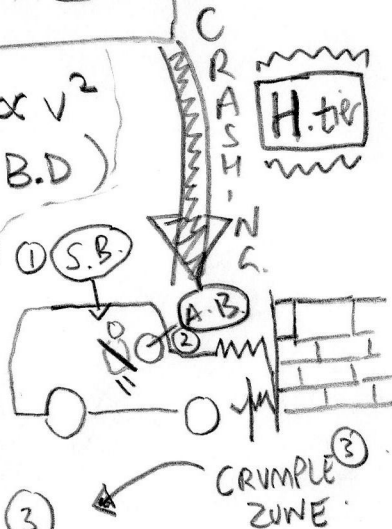
resultant force	accln.
0	0
+	+
-	-

# Force & Motion

- 1. large a
- 2. smaller a
- 3. no a (T.V)



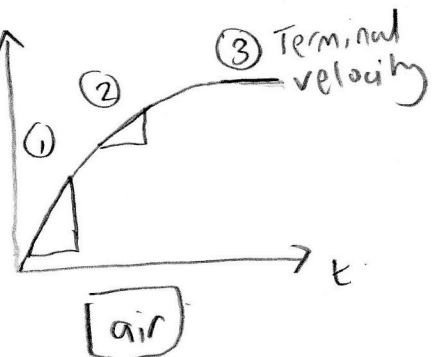
BRKING DISTANCE  $\propto v^2$   
 (2xv  $\rightarrow$  4x B.D)  
 (2<sup>2</sup>)



(Conservation of momentum)  
 Total Mom before = Total Mom after

1.  $2 \times 1 + 0 = 2 \times 1 + 0$

2.  $3 \times 2 + 0 = 4 \times v$   
 $\frac{6}{4} = v = 1.5 \text{ m/s}$



more drag force.  
 T.V. slower  
 T.V. lower  
 Liquid

ALL ①, ②, ③  
 Increase time  $\rightarrow$  decrease deceleration  
 Reduce force  $\rightarrow$  (less chance of injury)

$$\text{Force} = \frac{\text{mass} \times \text{change in velocity}}{\text{time}}$$
 \* GIVEN IN EXAM.