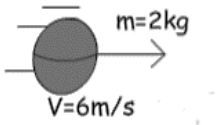
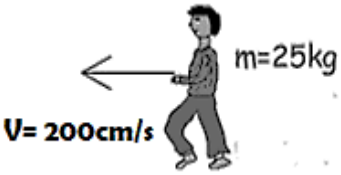
SUVA SANGAM COLLEGE

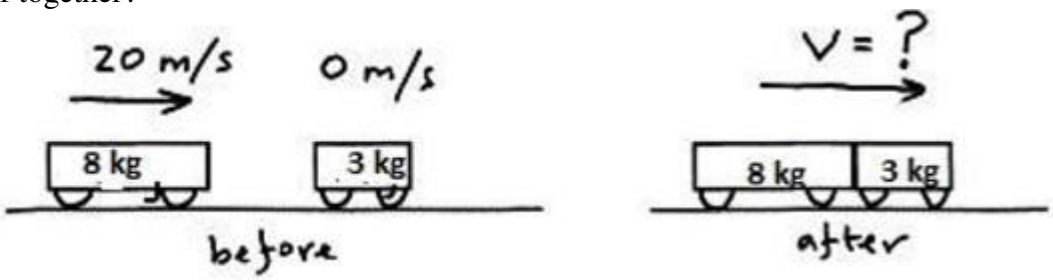
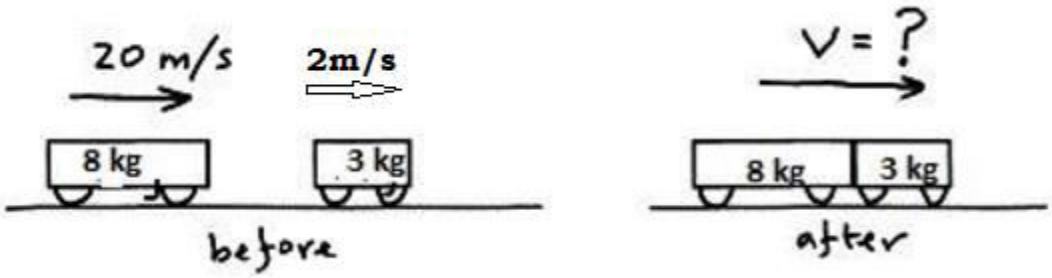
YEAR 11

PHYSICS

WORKSHEET 10

STRAND 1 MECHANICS

NO.	**CONCEPT IN BRIEF: MOMENTUM** • Momentum is a physical concept that is defined as "moving body". In other words when we talk about momentum we must have moving object, it must have both mass and velocity. **Momentum = Mass x Velocity** • We show momentum in physics with "p", mass with "m" (kg) and velocity with "V" (m/s). Then equation becomes; $p = mV$ • The unit of momentum is kgm/s. • Momentum is a vector quantity thus it must have direction also.
1	Calculate momentum in the following cases: a. A ball of mass 2 kg moves with velocity of 6 m/s to the east  b. A child having mass 25 kg and velocity 200 cm/s moves to the west. 
	CONCEPT IN BRIEF: MOMENTUM **THE LAW OF CONSERVATION OF MOMENTUM** "When two objects interact the total momentum remains the same provided no external forces are acting (a closed system)." **The momentum before collision = the momentum after collision.**

2.	A toy car of mass 8 kg is travelling at 20 m/s. It collides with a car of mass 3 kg which is stationary. The two cars join together and move of as one object, what is the velocity of the two cars as they move off together? 
3.	A toy car of mass 8 kg is travelling at 20 m/s. It collides with a car of mass 3 kg which moving in the same direction with velocity of 2m/s. The two cars join together and move of as one object, what is the velocity of the two cars as they move off together? 
4.	A toy car of mass 8 kg is travelling at 20 m/s. It collides with a car of mass 3 kg which moving in the other direction with velocity of 2m/s. The two cars join together and move of as one object, what is the velocity of the two cars as they move off together?