## Momentum WS 1

1.	A 3500 kg open train car is rolling on frictionless rails at 35 m/s when it starts pouring rain. A few minutes later, the car's speed is 22 m/s. What is the mass in kg of the water collected in the car?
2.	Janet is gliding on her skateboard at 11 m/s. She suddenly jumps backward off the skateboard, kicking the skateboard forward at 23 m/s. Janet has mass 37 kg and the skateboard's mass is 7 kg  a. How fast is Janet going as her feet hit the ground?
	b. How much energy in Joules did Janet use to kick the skateboard?
3.	A 78 kg football player running at +12 m/s catches a .4 kg ball traveling at -20 m/s.  a. What will the final velocity of the football player and ball combined mass after the catch?
	b. How much heat was generated during the catch?