1. 3.6 kg*m/s up
2. 70N up
3. 11N in the direction of the final velocity
4. 49000 kgm/s East (assuming the acceleration in the same direction as the initial velocity of the dragster
5. 9.6m/s
6. 6.1m/s
7. 0.16m/s to the right
8. 100kg m/s right
9. 11m/s
10. 340m/s Right
11. 10.6m/s Right (initial direction of the puck)
12. -5m/s or 5m/s West
13. 11m/s
14. 0.041 m/s Right, Yes he scores
15. a) 0.5kg m/s Left b) 1 kg m/s Left
16. 28 Ns 17° Nof W
17. 4.9Ns 22° S of W
18. 13 Kg m/s 22° E of N
19. 2120 kg m/s
20. 12m/s 34° E of N
21. 6.6 m/s 26° N of E
22. 33 m/s N of E
23. 270m/s 26° E of S
24. a) $4.4*10^6$ Ns 45° N of E b) 98000 N
25. a) 1.80m/s b) $12.16 *10^4$ J
26. a) 20.9 m/s east b) $1.50 *10^4$ J
27. a) The two players move together after the tackle b) 2.88m/s 32.4° N of E c) 785 J
28. 2.50 m/s at an angle of –60° with respect to the original line of motion
29. elastic; Ek,i = Ek,f = m (12.5 m2/s2)
30. 57 m
31. 1.32m
32. 0.556m
33. a) $3.5^2v_0^2/2g$ b) $0.5v_0$ c)$2v_0/Dg$ d) inelastic; $\Delta Ek = –3Mv_0^2 \neq 0$
34. 25.0 g object: 17.1 cm/s; 10.0 g object: 22.1 cm/s
35. a) 4.85 m/s b) 8.41 m