Name: 2D Force Assignment

1. What is Newton’s First Law and give a real life example. (1 marks)
2. What is Newton’s Second Law and give a real life example. (1 marks)
3. What is Newton’s Third Law and give a real life example. (1 marks)
4. What force is being applied to a mass of 132kg if it is being accelerated at a rate of 4.72m/s2? (1 mark)
5. A force of 23.5N is applied to a mass of 12kg at an angle of 41.50 above the horizontal. Assume a frictionless surface, what is the acceleration? Draw a Free Body Diagram (3 marks)
6. Given that the acceleration was 1.11m/s2 in question 5, what must the force of friction have been? (3 marks)
7. Using the information from questions 5 & 6, what is the coefficient of friction? (1 mark)

Name: Tension Force and Friction Assignment

1. a. Find the acceleration of the following system given that the µ=0.32. (4 marks)

27kg

25kg

b. Find the tension in the rope.(2 marks)

1. Using the system in question 1, what must be the coefficient of friction between the surface and 27kg mass be so that the system does not move? (4 marks)

Name: Inclined Plane Assignment

1. Find the acceleration and tension of the following system given that the mass on the inclined plane is 17.5kg, the hanging mass is 12.5kg, µ=0.113, and the angle of the incline is 21.40. (7 marks)

21.40

1. Using the information from Q3, how far does the mass slide after 11m? (2 marks)
2. Find the acceleration and tension of the following system given that the left mass is 12.5kg, the second mass is 32.5kg. Assume no friction (4 marks)

28.40

15.90

1. Using the information in question 5, find the acceleration if µ=0.21 on both surfaces (4 marks)