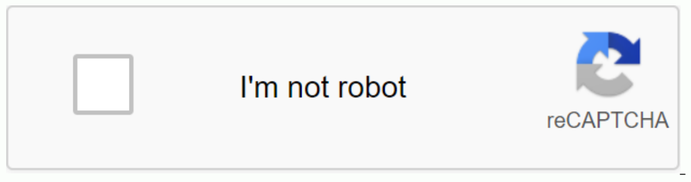

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Impulsive force model worksheet 4 answers

3 Sheets with more than 30 questions widely covering the principle of impulse protection, elastic collision, elastic collision, explosion, frinctional force, balanced forces, momentum and impulsivity. Suitable for students in Y10 and Y11. Read more Report a problem impulse, protection, speed, chart, primary, canon, alpha, aircraft, worksheet, decay, modeling, physics, work sheet Modelingphysics.org 4: Impulse Protection II - Physics Model Transcript Date Name Pd Impulsion Force Sheet Model 2: Impulsion forces and momentum 1. Two objects called A&B have the same speeds. Object A has 3 times the mass of object B. a. Find the amount of momentum ratio A to Momentum B. Justify your response. Object A: 3mv Object B: mv Object A has 3 times the momentum B b. Finding the ratio of kinetic energy A to kinetic energy B. Justify your response. A 1.5mv 2 3 Object A: 21 (3m)v 2 1.5mv 2 Object B: 21 mv 2 0.5mv 2 Ratio: B 0.5mv 2 EkA = 3 times EkB 2. Two objects called C&D have the same momentum. Object C has 1/2 mass of object D. a. Find the amount of C speed ratio to speed D. Justify your response. Object C should have 2 times the speed of D for your moment to equal, usd m2 2v mv b. Find the amount of kinetic energy ratio C to kinetic energy D. Justify your response. C mv 2 2 2 2 1 m 1 1 3 - The following questions refer to the movement of a baseball. Ali. While thrown, a net force of 132 N operates on a baseball (offense = 140 grams) for a period of 4.5 in 10-2 seconds. How big is the change in the momentum of the ball? F t'm v F t 132N (0.045s) If the initial baseball speed v = 0.0 m/s, what will be the speed when the pitcher's hand leaves? 5.9 kgs m5.9 kgs mv 5.9 kgs m v when the dough hits the ball, a net force of 1150 N, opposite the direction of the ball's initial movement, operates on the ball for 9.0 at 10-3 during the kick. What is the ultimate speed of the ball? F t ' m v F t ' 1150N(0.0090s) ' (0.140kg) v v4 ms vi v ' v f v i v f ' v v i v f ... 74 ms 42 ms ... 32 ms d. How big is the force that the ball exerts on the bat? Explain. The ball exerts force on the 1150N bat. The ball at bat and the bat on the ball are a pair of Rule 3. © Training - AMTA 2013 1 U9 Momentum - ws 2 v3.1 4. A rocket weighing 4.36 in 104N has a motor that provides an upward force of 1.2 by 105N. Reaches a maximum speed of 860 meters over s Fgases a. Drawing the force diagram for the missile. B. How long does the engine have to burn during launch to reach this speed? Fg 4.35□104 N m Fg (860) N s 10 kg mv g v Fnet t 49s Fnet 1.2 □ 105 N 4.35 □ 104 N 7.65 □ 104 N 5. Golf ball that has dropped weight 0.45 N Height 1.0 m. Suppose the golf ball collides quite elasticly with the floor. Start ending one. Build a motion map for the golf ball from when it dropped until it reaches its highest point of the rebound. To map the move to the right the ball is in contact with the floor and does not move at that moment. There are other correct answers. v v begin end a a All a = g except at bottom v a v b. Determine the time required for the ball to reach the floor. y = -1.0m 2y 2(1.0m) y* v yi t 21 at 2 t c. What will be the moment's movement of the golf ball immediately before hitting the ground? m 0.45N (1kg), 0.045kg 10N p mv mv mv. mgt . 045kg (10 sm2)(.45s), 0.045kg (4.5 ms) What would be a change in movement, (p) from the moment before the ball collided with the floor until the moment after it rebounded from the ground? (Illustration with vector diagram.) p' pf pi mv' 0.20 kgs m (0.20 kgs m) ' 0.40 kgs m e. assuming that the golf ball was in contact with the floor for 4.0 x 10-4s. What was the average force on the ball while associated with the pitch? Fnet t'm v F' 0.40 kgs'm v n 4 t 4.0 □ 10s ©MTA 2013 2 U9 Momentum - ws 2 v3.1 v3.1