Welcome back, Bill Wiecking

>>Working in AP Physics B (SC651)

Current Course
Course Home
Edit Course Info
Syllabus/Assignments
Grades
Student administration
Instructor administration

My Courses
AP Physics B
AP Physics C
Honors Physics
ePhysicsC
ePhysicsE

My Account
Change password
Manage courses

Homework Home
Logout

ch 4 quiz

Chapter 4: Motion in Two and Three Dimensions

Section 4: Acceleration in two dimensions

4.4.1 **(5.00)** An ice skater starts out traveling with a velocity of (−3.0, −7.0) m/s. He performs a 3.0 second maneuver and ends with a velocity of (0, 5.0) m/s. (a) What is his average acceleration over this period? (b) A different ice skater starts with the same initial velocity, accelerates at (1.5, 3.5) m/s^2 for 2.0 seconds, and then at (0, 5.0) m/s^2 for 1.0 seconds. What is his final velocity?

(a) (,) m/s^2

(b) (,) m/s

Section 7: Projectile motion

4.7.1 **(5.00)** A friend throws a baseball horizontally. He releases it at a height of 2.0 m and it lands 21 m from his front foot, which is directly below the point at which he released the baseball. (a) How long was it in the air? (b) How fast did he throw it?

(a) s

(b) m/s

4.7.7 **(5.00)** A box is dropped from a spacecraft moving horizontally at 27.0 m/s at a distance of 155 m above the surface of a moon. The rate of freefall acceleration on this airless moon is 2.79 m/s^2. (a) How long does it take for the box to reach the moon's surface? (b) What is its horizontal displacement during this time? (c) What is its vertical velocity when it strikes the surface? (d) At what speed does the box strike the moon?

(a) s

(b) m

(c) m/s

(d) m/s

4.7.11 **(7.00)** Randy Johnson throws a baseball horizontally from the top of a building as fast as his 2004 record of 102.0 mph (45.6 m/s). How much time passes until it moves at an angle 13.0 degrees below the horizontal? Ignore air resistance.

s

Section 14: Projectile motion: aiming a cannon

4.14.6 **(7.00)** You are the stunt director for a testosterone-laden action movie. A car drives up a ramp inclined at 10.0° above the horizontal, reaching a speed of 40.0 m/s at the end. It will jump a canyon that is 101 meters wide. The lip of the takeoff ramp is 201 meters above the floor of the canyon. (a) How long will the car take to cross the canyon? (b) What is the maximum height of the cliff on the other side so that the car lands safely? (c) What angle with the horizontal will the car's velocity make when it lands on the other side? Assume the height of the other side is the maximum value you just calculated. Express the angle as a number between −180° and +180°.

(a) _____ s

(b) _____ m

(c) _____ °

Section 23: Sample problem: relative velocity

4.23.3 **(5.00)** You have a boat with a motor that propels it at v_{boat} = 4.5 m/s relative to the water. You point it directly across the river and find that when you reach the other side, you have traveled a total distance of 27 m (indicated by the dotted line in the diagram) and wound up *L* m downstream. What is the speed of the current?

_____ m/s

Back to assignments list

Current server time is: 2008-02-17 16:27