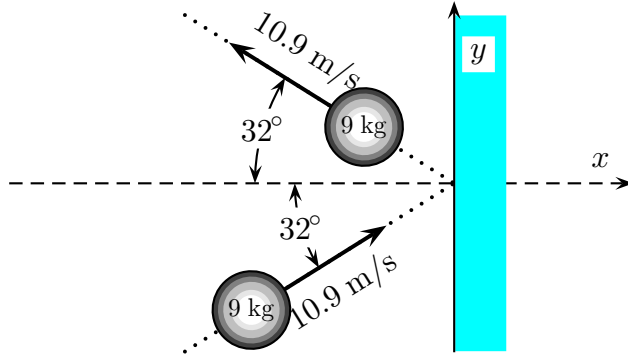


This print-out should have 6 questions. Multiple-choice questions may continue on the next column or page – find all choices before answering.

Ball Hits the Wall

001 10.0 points

A 9 kg steel ball strikes a wall with a speed of 10.9 m/s at an angle of 32° with the normal to the wall. It bounces off with the same speed and angle, as shown in the figure.



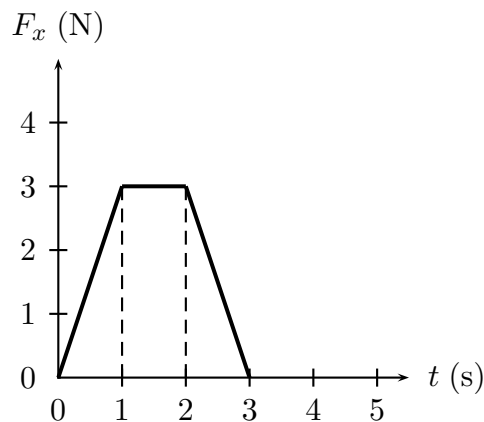
If the ball is in contact with the wall for 0.307 s, what is the magnitude of the average force exerted on the ball by the wall?

Correct answer: 541.977 N.

Serway CP 06 12

002 (part 1 of 3) 10.0 points

The force of magnitude F_x acting in the x direction on a 1.3 kg particle varies in time as shown in the figure.



Find the impulse of the force.

Correct answer: 6 N · s.

003 (part 2 of 3) 10.0 points

Find the final velocity of the particle if it is initially at rest.

Correct answer: 4.61538 m/s.

004 (part 3 of 3) 10.0 points

Find the final velocity of the particle if it is initially moving along the x axis with a velocity of -6 m/s.

Correct answer: -1.38462 m/s.

Serway CP 06 53

005 10.0 points

A(n) 82 kg man, standing erect, steps off a 3.8 m high diving platform and begins to fall from rest. The man comes to rest 1.9 s after reaching the water.

The acceleration of gravity is 9.8 m/s².

What average force did the water exert on him?

Correct answer: 1176.06 N.

Force on a Golf Ball

006 10.0 points

A golf ball ($m = 34.3$ g) is struck a blow that makes an angle of 32.8° with the horizontal. The drive lands 276 m away on a flat fairway.

The acceleration of gravity is 9.8 m/s².

If the golf club and ball are in contact for 4.12 ms, what is the average force of impact? Neglect air resistance.

Correct answer: 453.712 N.