

Name:	Period: Key
IPC - Schenck	Date:

Two Step Force Problems

Show all work for all problems! No work equals no credit!

1. A 50 kg boy runs in a race. He is going 23 m/s but gets a burst of energy and accelerated to a speed of 29 m/s in 3.5 seconds. What amount of force is needed to cause that amount of acceleration?

85 N

2. An astronaut on another planet witnesses an alien fruit fall from an alien tree. He uses his radar to find out that the fruit hits the ground at a speed of 30 m/s. If the fruit is found to have a mass of .45 kg, what is the force due to gravity on that planet? What is it's acceleration due to gravity?

13.5 N

3. If a force of 20 N is applied to a 10 kg door, what is the speed of the door right before it is shut if it takes 2.3 seconds to close?

0.529 m/s

4. If a student can move his pencil at a speed of .25 m/s while taking a test, how much force would the student exert on the pencil if all of a sudden he gets brainstorm and accelerates his writing to .75 m/s in .45 s?

0.001 N

5. What would be the force applied to an object if the object accelerates from 50 m/s to 75 m/s in 20 s?

75 N