CHAPTER 9

9.3 Newton’s Second Law

Student:   Class:   Date:

**1.** State Newton’s Second Law of Motion.

The acceleration of a body is directly proportional to the net force and inversely proportional to its mass.

**2.** Use the formula: *F*  *ma* to complete the following table

|  |  |  |
| --- | --- | --- |
| Force (*F*) (newtons) | Mass (*m*) | Acceleration (*a*) |
| 100 | 40 kg | = 2.5 m/s2 |
| 2 | 200 g | = 10 m/s2 |
| 70 | = 20 kg | 3.5 m/s2 |
| 100 | = 1000 kg | 10 cm/s2 |

**3.** Consider the forces acting on a body of mass 40 kg resting on a frictionless surface.

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|  | 09 | (a)Calculate the net force acting  on the body.  *F* = 35 − 15 = 20 N |

(b)Calculate the acceleration of the body.

*a* =  =  = 0.5 m/s2

**4.** The photo shows a drag car coming to a stop at the end of a race.

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|  | 09 |

(a)To come to a complete stop the drag car negatively accelerates. Identify another term for ‘negative acceleration’. ...................................................................

Deceleration

Friction

(b) Identify the force that brings the drag car to a stop. .....................................................................