**Unit 5 – Quiz 1**

**Newton’s 2nd Law**

For the situations below, be sure to SHOW YOUR WORK in the space provided.

1. What is the force of gravity on a 15.0 kg rock:

|  |  |
| --- | --- |
| **Location:** | **Gravitational field strength** |
| Earth | 9.8 N/kg (~10 N/kg) |
| Moon | 1.6 N/kg |
| Mars | 3.7 N/kg |
| Jupiter | 25 N/kg |

* 1. On the Earth?

* 1. On the Moon?

* 1. On Jupiter?

* 1. On Mars?

1. What is the mass of an object on Earth, which experiences a 280 N gravitational force?

1. A 2400.0 kg sports car accelerates at 6.0 m/s/s. What is the net force (“ΣF”) on the car?
2. A skydiver jumps from an airplane and experiences a 5 m/s/s acceleration. If the sky diver has a mass of 50.0 kg, what is the net force (“ΣF”) on her?
3. A small boulder is launched out of a catapult at a castle with a net force of 7800 N. If the rock experiences an acceleration of 25 m/s/s during the launch, what is the mass of the boulder?
4. What is the Standard International (SI) unit of:
   1. Force?
   2. Mass?
   3. Acceleration?