

Worksheet 5.2 - Gravitational Field Strength

- 1) What is the weight of a 25.0 kg object near the surface of the earth?
- 2) What is the mass of an object if it has a weight of 80.0 N near the earth's surface?
- 3) What is the acceleration due to gravity near the surface of the moon if an object that has a mass of 22.0 kg has a weight of 36.0 N near the moon's surface?
- 4) What is the weight of a 72.0 kg object near the surface of the Moon?
- 5) What is the mass of an object if it has a weight of 127 N near the earth's surface?
- 6) What is the gravitational field strength at a point 6.38×10^6 m above earth's surface?
- 7) What is the acceleration due to gravity on the surface of the sun?
 $r_{\text{sun}} = 6.96 \times 10^8$ m
 $m_{\text{sun}} = 1.99 \times 10^{30}$ kg
- 8) The Earth orbits the Sun at a distance of 1.46×10^{10} m from center to center. What is the strength of the Sun's gravitational field at this distance?