[**VISUAL PHYSICS ONLINE**](http://www.physics.usyd.edu.au/teach_res/hsp/sp/spHome.htm)

**Question 1 (P5023)**

How could you find the mass of the Earth from its radius and the acceleration due to gravity at the Earth’s surface?

**Question 2 (P5086)**

What is the gravitational force acting a 2000 kg satellite when it is orbiting the Earth at twice the Earth’s radius?

Earth’s mass *ME* = 5.97×1024 kg

Earth’s radius *RE* = 6.38×106 m

**Question 3 (P5117)**

A 50 kg person and a 75 kg person are sitting on a bench 500 mm apart. Estimate the gravitational force acting between the two people.

**Question 4 (P5188 21 22)**

(a) Explain the reason for the selection of infinity as the place of zero gravitational potential energy.

(b) How does this selection of zero level result in any point with a gravitational field having a negative gravitational potential energy value?

**Question 5** (**P5345)**

Find the net force acting on the Moon from the Earth and the Sun if they are at right angles to each other.

*MM* = 7.35×1022 kg *MS* = 1.99×1030 kg

*RME* = 3.84×105 km *RMS* = 1.50×108 km

**Answer 1 (A5023)**



**Answer 2 (A5086)**

4900 N

**Answer 3 (A5117)**

1.0×10-6 N

**Answer 4 (A5188)**

(a) The gravitational force between the objects at infinity is zero.

(b) The zero level at infinity is the maximum level which means that all other values must be negative.

**Answer 5 (A5345)**

*F* = 4.77×1020 N θ = 24.6o