3 **(a)** Define *gravitational field strength*.

.....

..... [1]

(b) Explain why, for changes in vertical position of a point mass near the Earth's surface, the gravitational field strength may be considered to be constant.

.....

.....

.....

..... [2]

(c) The orbit of the Earth about the Sun is approximately circular with a radius of 1.5×10^8 km. The time period of the orbit is 365 days.

Determine a value for the mass M of the Sun. Explain your working.

M = ... kg [5]

[Total: 8]