

Answer **all** the questions in the spaces provided.

- 1 (a) State Newton's law of gravitation.

.....  
.....  
..... [2]

- (b) A geostationary satellite orbits the Earth. The orbit of the satellite is circular and the period of the orbit is 24 hours.

- (i) State **two** other features of this orbit.

1. ....  
.....  
.....  
2. ....  
..... [2]

- (ii) The radius of the orbit of the satellite is  $4.23 \times 10^4$  km.

Determine a value for the mass of the Earth. Explain your working.

mass = ..... kg [4]

[Total: 8]