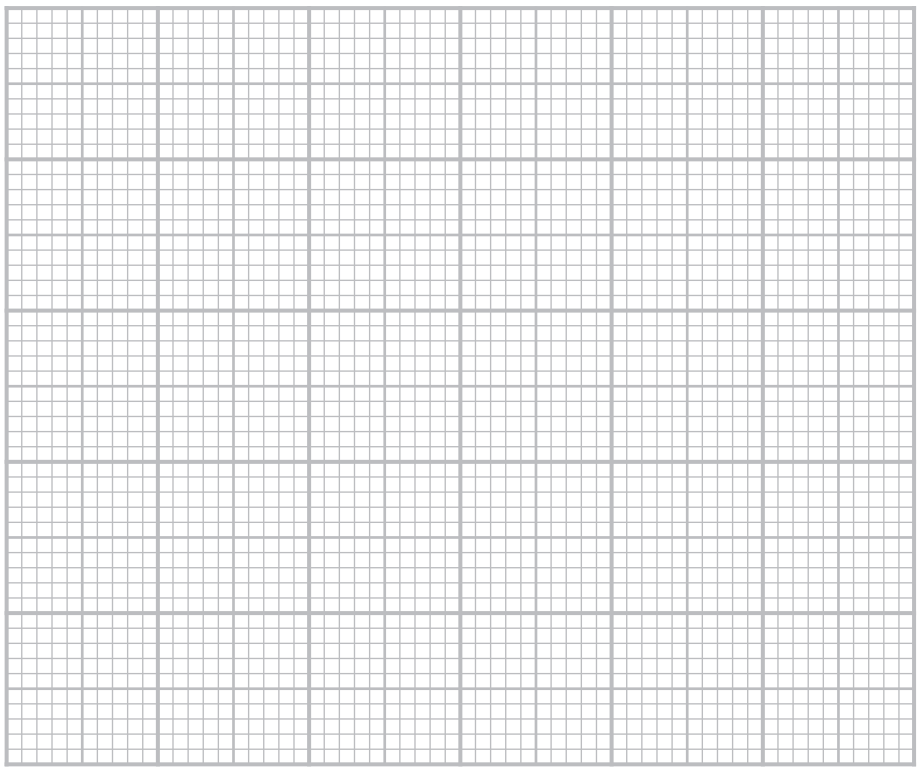
4 The table gives data for some of the planets in the solar system.

Planet	Gravitational field strength at surface in N / kg	Orbital radius in km	Orbital speed in km / s
Mercury	3.7	57.9×10^6	47.4
Venus	8.9	108.2×10^6	35.0
Jupiter	23.1	778.6×10^6	13.1
Saturn	9.0	1433.5×10^6	9.7
Uranus	8.7	2872.5×10^6	6.8
Neptune	12.7	4495.1×10^6	5.4

(a) Plot a bar chart of the gravitational field strength for each planet.

(3)



(b) Suggest why planets have different gravitational field strengths at their surface.

(1)

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(c) Give the relationship shown by the data in the table between the orbital radius and the orbital speed for the planets in the solar system.

(1)

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(d) Calculate the time period of Mercury's orbit around the Sun.

(3)

time period = ... s

(Total for Question 4 = 8 marks)