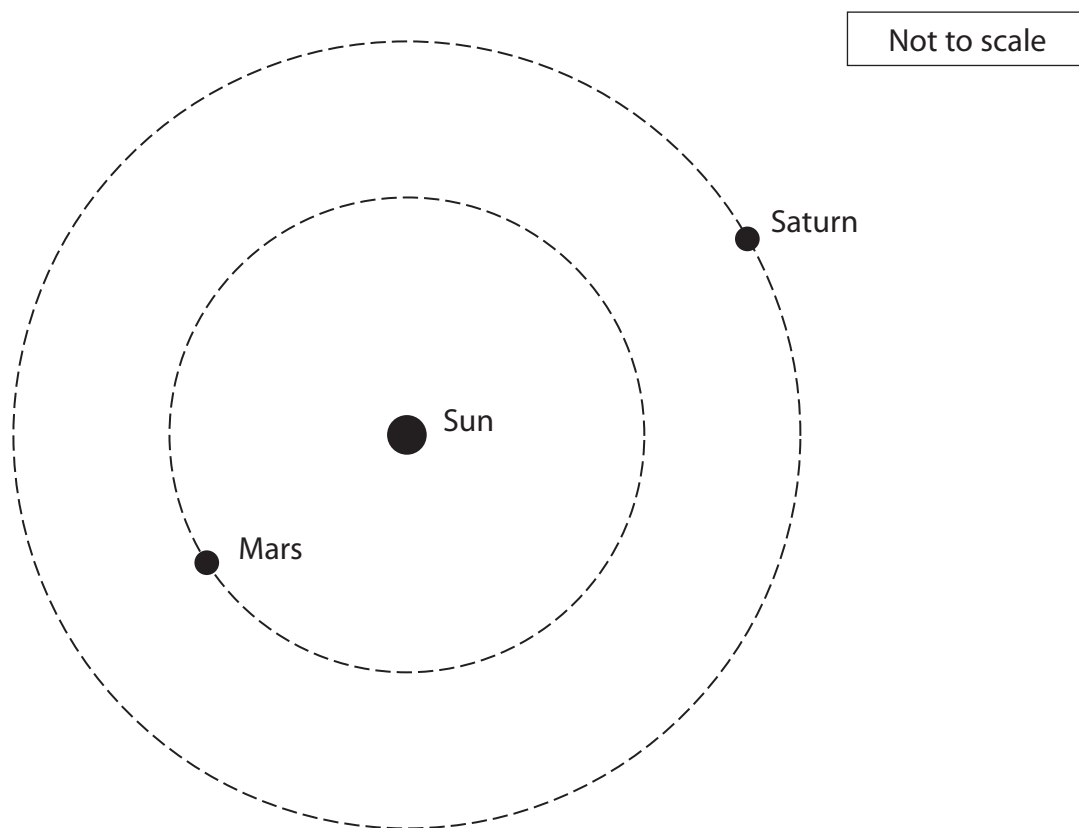


**12** The planets Mars and Saturn orbit around the same star, the Sun.

(a) The diagram shows the orbital paths of Mars and Saturn.



Draw an orbital path of a comet on the diagram.

(2)

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(b) The table gives some information about the orbits of Mars and Saturn.

	Mars	Saturn
Orbital radius in km	$2.28 \times 10^8$	$1.43 \times 10^9$
Orbital speed in km/s	24.1	9.70

Mars completes a number of orbits in the time it takes for Saturn to complete one orbit.

Calculate the number of orbits that Mars completes in the time it takes for Saturn to complete one orbit.

(5)

number of orbits = .....

(Total for Question 12 = 7 marks)

**TOTAL FOR PAPER = 110 MARKS**

