

6 This page is from a science magazine.

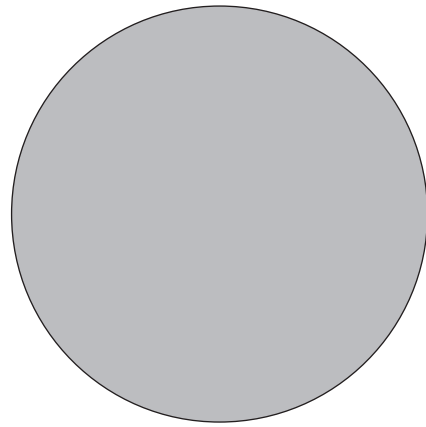
The Red Planet

The two natural satellites, or moons, of Mars are Phobos (fear) and Deimos (terror). They are named after the horses which pulled the chariot of Mars, the god of war in the mythology of Ancient Greece.

Phobos takes less than eight hours to orbit Mars and gets slightly closer every time it does so. Scientists predict that in about 100 million years time it will either be ripped apart by the gravitational force or will crash onto the surface of Mars.

○ Deimos

○ Phobos



Not to scale



6 (a) Suggest how scientists have arrived at their prediction of about 100 million years.

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(2 marks)

6 (b) The centripetal force on Phobos is gradually changing as it orbits Mars.

Is the force increasing or decreasing?

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Explain your answer.

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(2 marks)

6 (c) Scientists expect that the mass of Mars and the mass of Phobos will not increase.

Explain what will happen to the gravitational force on Phobos as it orbits Mars.

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(2 marks)

6

Turn over for the next question

Turn over ►

