14 Mars, like the Earth, spins on its axis as it orbits the Sun.

A rock orbits Mars such that it is always above the same place on the equator of Mars.

Some data about Mars and the rock are shown.

radius of Mars	distance from rock to the surface of Mars	length of day on Mars
3.40×10^3 km	1.72×10^4 km	8.86×10^4 s

What is the acceleration due to gravity on the surface of Mars?

A $3.8 \times 10^{-3}\,m\,s^{-2}$

B $0.628\,m\,s^{-2}$

C $2.21\,m\,s^{-2}$

D $3.80\,m\,s^{-2}$