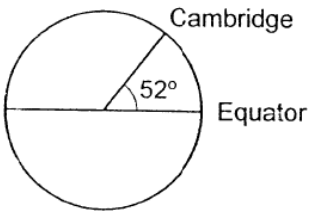
7 Singapore is on the Equator. Cambridge is at a latitude of 52° N, as shown in the diagram.



A student at Singapore has a centripetal acceleration a_s because of the Earth's rotation about its axis. The centripetal acceleration of another student at Cambridge is a_c.

What are the magnitudes of the centripetal accelerations? (radius of Earth = 6.4×10^6 m; angular velocity of Earth about axis = 7.3×10^{-5} rad s^{-1})

	a_s / m s^{-2}	a_c / m s^{-2}
A	3.4×10^{-2}	2.1×10^{-2}
B	3.4×10^{-2}	2.7×10^{-2}
C	3.4×10^{-2}	3.4×10^{-2}
D	4.7×10^{2}	4.7×10^{2}