

4. (b) The intensity of solar radiation at the surface of the Earth is 1.38 kW m^{-2} . The orbital radii of Earth and Mars are respectively $1.496 \times 10^8 \text{ km}$ and $2.280 \times 10^8 \text{ km}$. Estimate the surface temperature of Mars assuming that both planets behave like blackbodies.

[6 marks]