7 **(a)** Define the *radian*.

....

....

.... [2]

(b) A telescope gives a clear view of a distant object when the angular displacement between the edges of the object is at least 9.7×10^{-6} rad.

(i) The Moon is approximately 3.8×10^5 km from Earth.
Estimate the minimum diameter of a circular crater on the Moon's surface that can be seen using the telescope.

diameter = ... km [2]

(ii) Suggest why craters of the same diameter as that calculated in **(i)** but on the surface of Mars are not visible using this telescope.

....

....

.... [2]