Answer on Question #61841 – Math – Algebra

Question

Model the Earth as a sphere, and take the diameter of the Earth as 12740 km.

Calculate the circumference of the Earth.

Calculate the surface area of the Earth, and give your answer in scientific notation.

Solution

The circumference is calculated by the following formula:

$$l = 2\,\pi R,$$

where *R* is the radius.

So circumference is equal to

$$2\,\pi \cdot 12740 \approx 80047\ km = 8.0047 * 10^4 km$$

The surface area is calculated by the following formula:

$$S = 4\,\pi R^2,$$

$$S = 4\,\pi \cdot 12740^2 \approx\ 2039617455\ km^2 = 2.039617455 \cdot 10^9 km^2.$$

Answer:

Circumference = $8.0047 \cdot 10^4 km$.

Surface area = $2.039617455 \cdot 10^9 km^2$.