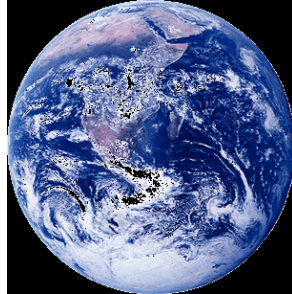


PERIMETER OF A CIRCLE

APPLICATIONS

EARTH ROTATION SPEED



Q1. (a) The radius of the Earth at the Equator is 6371 km. Calculate the circumference of the Earth at the Equator. Write the answer to the nearest km.

(b) This circumference turns once in 24 hours (one day). What is the speed of rotation at the Equator? Write the answer to the nearest km/h.

Q2. Places closer to the North Pole and the South Pole have smaller radii. The formula to work their radii out is:

Radius at a particular Latitude = 6371 km X Cos of the Latitude
 e.g. Radius at Latitude of 20°S = 6371 X Cos 20° = 5987 km

Use a scientific calculator with a “cos” button to calculate the radius at Felicitas whose Latitude is 53°N. Write the answer to the nearest km.

Q3. Complete the table to calculate the radius, the circumference and the speed of rotation at the following cities. Write the answer to the nearest whole number. The first one has been completed as an example.

	CITY	POSITION ON EARTH	RADIUS OF EARTH	CIRCUMFERENCE OF EARTH	SPEED OF ROTATION
	Sydney	(34°S, 150°E)	6371 x cos 34 = 5282 km	2 x 5282 x 3.14 = 33171 km	33171 ÷ 24 = 1382 km/h
(a)	London	(51°N, 0°W)			
(b)	New York	(40°N, 75°W)			

ANSWERS

Q1. (a) 40030 km
(b) 1668 km/h

Q2. 3834 km

Q3. (a) 4009 km, 25192 km, 1050 km/h
(b) 4880 km, 30665 km, 1278 km/h