

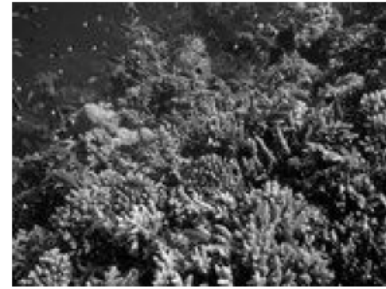
## Level 4 Homework Scientific Notation and Indices

Q1.

A biologist is carrying out a study into coral on the Great Barrier Reef of Australia. He estimates 1 cubic metre of coral contains  $5.66 \times 10^5$  individual animals.

How many individual animals would there be in 10 000 cubic metres of coral?

**Give your answer in Scientific Notation.**

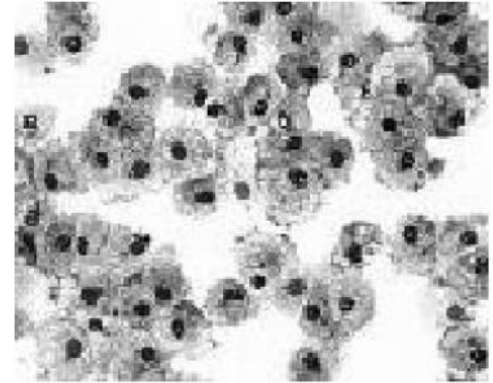


Q2.

A human body contains approximately  $2.6 \times 10^{13}$  blood cells. At any one time the number of these which are white blood cells is about  $7.5 \times 10^9$ .

Express the number of white blood cells in the body as a percentage of the total number of cells.

**Give your answer in Scientific Notation.**



Q3. Evaluate the following:

(i)  $\sqrt{36}$

(ii)  $\sqrt[3]{8}$

(iii)  $\sqrt[4]{10000}$

Q1. Simplify the following:

(a)  $k^2 \times k^3$

(h)  $\frac{c^2 \times c^3 \times c^5}{c \times c^2}$

(b)  $3m^5 \times 5m^8 \times m^{-3}$

(i)  $(a^3)^4$

(c)  $t^4 \times 2t^{-5} \times t^{-3}$

(j)  $(3k^2)^3$

(d)  $\frac{z^{12}}{z^8}$

(k)  $(2k \times k^2 \times k^3)^3$

(e)  $\frac{a^5b^3}{a^1b^1}$

(l)  $\frac{(4c^2 \times c^3 \times c^5)^2}{12c \times c^2}$

(f)  $m^4(m + m^{-2})$

(g)  $m(m^2 + m^{-1})$