Practical Standard Form

(a)

The table shows the diameter of some planets in the solar system.

Planet	Diameter (km)
Earth	1.3×10^4
Mercury	4.8×10^3
Neptune	4.9×10^4
Saturn	1.2×10^5

(i) Calculate the difference, in km, between the diameter of Earth and the diameter of Saturn. Give your answer in standard form.

$1.07 \times 10^5\ km$

(ii) The diameter of Neptune is k times bigger than the diameter of Mercury. Find the value of k to 1 decimal place.

10.2

(iii) Find the ratio of the diameter of Saturn to the diameter of Mercury in the form $n : 1$

$25 : 1$

(b)

The table shows the populations of some European countries.

Country	Population
Belgium	1.16×10^7
Estonia	1.33×10^6
Iceland	3.41×10^5
Russia	1.46×10^8

(i) Calculate the total population of these four countries. Give your answer in standard form to 3 significant figures.

1.59×10^8

(ii) How many more people live in Estonia than live in Iceland? Give your answer in standard form.

9.89×10^5

(iii) Calculate the ratio of the population of Belgium to the population of Russia. Give your answer in the form $1 : n$, where n is rounded to 1 decimal place.

$1 : 12.6$

(c)

The table shows the areas in square kilometres of four Asian countries.

Country	Area (km^2)
China	9.6×10^6
Hong Kong	1.11×10^3
Japan	3.78×10^5
Pakistan	7.96×10^5

(i) Calculate the total area of China, Japan and Hong Kong. Give your answer in standard form to 3 significant figures.

$9.98 \times 10^6\ km^2$

(ii) Calculate the difference in area between China and Pakistan. Give your answer in standard form.

$8.804 \times 10^6\ km^2$

(iii) The population of Hong Kong is $7.48\ million$. Find the population density of Hong Kong to the nearest integer, where:

$Population\ density = Population \div Area$

$6739\ people/km^2$