Calculating in Standard Form

Without using a calculator, work out the following, giving your answer in standard form.

(a) $(2 \times 10^5) + (3 \times 10^4)$

(b) $(6.2 \times 10^7) - (5 \times 10^6)$

(c) $(3 \times 10^{-2}) + (7 \times 10^{-1})$

(d) $(1.5 \times 10^{-4}) - (9 \times 10^{-5})$

(e) $(2 \times 10^5) \times (3 \times 10^4)$

(f) $(6 \times 10^8) \div (2 \times 10^4)$

(g) $(1.5 \times 10^{-4}) \times (3 \times 10^8)$

(h) $(4.4 \times 10^7) \div (1.1 \times 10^{-3})$

Using a calculator, work out the following, giving your answer in standard form.

(a) $(1.25 \times 10^5) + (3.4 \times 10^5)$

(b) $(2.7 \times 10^{-4}) - (1.28 \times 10^{-5})$

(c) $(3.87 \times 10^{-2}) \times (5.3 \times 10^4)$

(d) $\dfrac{4.1 \times 10^6}{1.73 \times 10^{-2}}$

(e) $(7.3 \times 10^{-2})^2$

(f) $\sqrt{(3.6 \times 10^{11})}$

(a) Given that $F = ma$, find F when $m = 1.2 \times 10^{-12}$ g and $a = 4.5 \times 10^9 m/s^2$.

(b) Denmark has a population of 5.36×10^6 and Jamaica has a population of 2.56×10^6. How many more people live in Denmark than in Jamaica?

(a) The mass of Saturn is 5.686×10^{26} tonnes and the mass of the Earth is 6.04×10^{21} tonnes. How many times heavier is Saturn than Earth?

(b) In 2009 the world population was 6.77×10^9. In 2019 it was 7.73×10^9. Calculate the percentage increase in population between 2009 and 2019.