

Adding and Subtracting in Standard Form

1. Solve the following. Give your answers in standard form:

a. $(5 \times 10^3) + (2 \times 10^3) = 7 \times 10^3$ b. $(1.7 \times 10^5) + (3.1 \times 10^5) = 4.8 \times 10^5$
c. $(4.2 \times 10^2) + (2.5 \times 10^3) = 2.92 \times 10^3$ d. $(7.8 \times 10^5) + (1.4 \times 10^4) = 7.94 \times 10^5$
e. $(7.24 \times 10^6) + (3 \times 10^6) = 1.024 \times 10^7$ f. $(8.01 \times 10^8) + (4 \times 10^3) = 8.01004 \times 10^8$
g. $(4.27 \times 10^5) + (9.3 \times 10^2)$ h. $(2.9 \times 10^{-5}) + (6 \times 10^{-4})$
 $= 4.2793 \times 10^5$ $= 6.29 \times 10^{-4}$
i. $(2.01 \times 10^{-2}) + (9.3 \times 10^{-4})$ j. $(4.12 \times 10^{-7}) + (8.2 \times 10^{-5})$
 $= 2.103 \times 10^{-2}$ $= 8.2412 \times 10^{-5}$

2. Solve the following. Give your answers in standard form:

a. $(8 \times 10^6) - (3 \times 10^6) = 5 \times 10^6$ b. $(4.81 \times 10^4) - (4.5 \times 10^4) = 3.1 \times 10^3$
c. $(7.51 \times 10^8) - (4.4 \times 10^7)$ d. $(8.32 \times 10^7) - (2.1 \times 10^6)$
 $= 7.07 \times 10^8$ $= 8.11 \times 10^7$
e. $(2.7 \times 10^{12}) - (3 \times 10^{10})$ f. $(8.44 \times 10^{-8}) - (3.4 \times 10^{-9})$
 $= 2.67 \times 10^{12}$ $= 8.1 \times 10^{-8}$
g. $(1.6 \times 10^{21}) - (3.3 \times 10^{19})$ h. $(8.132 \times 10^2) - (9.9 \times 10^{-1})$
 $= 1.567 \times 10^{21}$ $= 8.1221 \times 10^2$
i. $(8.01 \times 10^{-4}) - (3.3 \times 10^{-3})$ j. $(5.8311 \times 10^8) - (5.42 \times 10^6)$
 $= -2.499 \times 10^{-3}$ $= 5.7769 \times 10^8$

3. In a science lab there are three petri dishes. The first dish contains 2.75×10^8 bacteria, the second dish contains 6.12×10^5 bacteria and the third dish contains 8.345×10^6 bacteria.

In standard form, how much bacteria is there in the three petri dishes in total?

$$= 2.83957 \times 10^8$$

4. An asteroid was 3.5×10^{11} metres from Earth. It is now 9.391×10^8 metres closer to Earth. How far away is it now?

$$= 3.490609 \times 10^{11}$$

5. Fill in the gaps to make the following questions correct:

a. $(7.21 \times 10^4) + (7.289 \times 10^5) = 8.01 \times 10^5$

b. $(2.901 \times 10^8) - (2.888 \times 10^8) = 1.3 \times 10^6$