Standard Index Form

Write the following standard numbers in ordinary form.

1) 3.5×10^6 = _____

2) 2.7×10^3 = _____

3) 1.25×10^{-5} = _____

4) 2.2545×10^5 = _____

5) 7.2×10^{-3} = _____

Write the following numbers into standard index form.

6)   12500000   = _____

7)   234500   = _____

8)   0.0000142   = _____

9)   0.0000368   = _____

10) 154750000   = _____

11) 72×10^{-3} = _____

12) 280×10^3 = _____

13) 0.0000272×10^4 = _____

14) 0.00047×10^{-3} = _____

15) 36×10^{-7} = _____

Simplify and write your answer in standard index form.

16. $(1.5 \times 10^3) \times (1.5 \times 10^7)$ = _____

17. $(4.2 \times 10^4) \div (2.1 \times 10^6)$ = _____

18. $(6.3 \times 10^9) \div (2.1 \times 10^{-4})$ = _____

19. $(3 \times 10^7) \times (4 \times 10^9)$ = _____

20. $(6 \times 10^9) \div (3 \times 10^3)$ = _____

21. $(18 \times 10^8) \div (6 \times 10^2)$ = _____

22. $(4 \times 10^9) \times (3 \times 10^{-2})$ = _____

23. $(3 \times 10^6) \times (5 \times 10^{-4})$ = _____

24. $(8 \times 10^6) \div (2 \times 10^{18})$ = _____

25. $7.2 \times 10^{-5} \div 0.0000036$ = _____

Addition and Subtraction in Standard Index Form.

26. $3 \times 10^{-4} + 3 \times 10^{-5}$ = _____

27. $4 \times 10^{-7} - 3 \times 10^{-8}$ = _____

28. $5 \times 10^{-6} - 5 \times 10^{-7}$ = _____

29. $7 \times 10^5 - 8 \times 10^3$ = _____

30. $6.3 \times 10^5 + 3.2 \times 10^4$ = _____

Q31. In 2007, British Airways carried 26.3 million passengers. Of these, 60% passed through Heathrow Airport. On average, each passenger carried 17.5 kg of luggage. Calculate the total weight of the luggage carried by these passengers.

_____

Q32. Many people withdraw money from their banks by using hole-in-the-wall machines. Each day there
are eight million withdrawals from 32 000 machines. What is the average number of withdrawals per machine?

_____

Q33. The mass of Saturn is 5.686×10^{26} tonnes. The mass of the Earth is 6.04×10^{21} tonnes. How many times heavier is Saturn than the Earth? Give your answer in standard form to a suitable degree of accuracy.

_____

Q34. The population of Italy is 6×10^7
The population of San Marino is 3×10^7 The population of Italy is bigger than the population of San Marino. How many times bigger?

_____

Q35. If x= 1.2×10^{-3}, y= 8.8×10^{-4}

Work out the value of

a. xy   = _____

b. $2y^2$ = _____

c. x/y   = _____

d. xy / (x+ y) = _____