

Examples:

Write the following numbers in standard form, do not use a calculator:

- a) $(5 \times 10^3) \times (7 \times 10^4) = 35 \times 10^3 \times 10^4 = 35 \times 10^7 = 3.5 \times 10^8$
- b) $(2 \times 10^{-3}) \times (3.2 \times 10^8) = 6.4 \times 10^{-3} \times 10^8 = 6.4 \times 10^{-3+8} = 6.4 \times 10^5$
- c) $(8 \times 10^6) \div (4 \times 10^3) = (8 \div 4) \times (10^6 \div 10^3) = 2 \times 10^{6-3} = 2 \times 10^3$
- d) $(4.5 \times 10^{-2}) \div (3 \times 10^{-5}) = (4.5 \div 3) \times (10^{-2} \div 10^{-5}) = 1.5 \times 10^{-2--5} = 1.5 \times 10^3$

Exercise:

Write the following numbers in standard form, do not use a calculator:

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| 1. $(3 \times 10^2) \times (2 \times 10^6) = 6 \times 10^8$ | 11. $(6 \times 10^6) \div (3 \times 10^4) = 2 \times 10^2$ |
| 2. $(1.5 \times 10^3) \times (3 \times 10^9) = 4.5 \times 10^{12}$ | 12. $(9 \times 10^{-2}) \div (3 \times 10^5) = 3 \times 10^{-7}$ |
| 3. $(2.1 \times 10^6) \times (3 \times 10^2) = 6.3 \times 10^8$ | 13. $(8.8 \times 10^5) \div (2 \times 10^3) = 4.4 \times 10^2$ |
| 4. $(1.4 \times 10^5) \times (2 \times 10^3) = 2.8 \times 10^8$ | 14. $(9.9 \times 10^{-4}) \div (1.1 \times 10^5) = 9 \times 10^{-9}$ |
| 5. $(2.5 \times 10^3) \times (3 \times 10^8) = 7.5 \times 10^{11}$ | 15. $(8 \times 10^6) \div (4 \times 10^3) = 2 \times 10^3$ |
| 6. $(4 \times 10^4) \times (5 \times 10^9) = 2 \times 10^{14}$ | 16. $(4.5 \times 10^{-2}) \div (3 \times 10^{-5}) = 1.5 \times 10^3$ |
| 7. $(5 \times 10^2) \times (7 \times 10^7) = 3.5 \times 10^{10}$ | 17. $(9.6 \times 10^{-7}) \div (3 \times 10^3) = 3.2 \times 10^{-10}$ |
| 8. $(6 \times 10^{-3}) \times (3 \times 10^8) = 1.8 \times 10^6$ | 18. $(7.5 \times 10^{-11}) \div (5 \times 10^{-2}) = 1.5 \times 10^{-9}$ |
| 9. $(4 \times 10^{-9}) \times (4.1 \times 10^{-4}) = 1.64 \times 10^{-12}$ | 19. $(1.6 \times 10^6) \div (8 \times 10^{-9}) = 2 \times 10^{14}$ |
| 10. $(6.3 \times 10^{-7}) \times (3 \times 10^{-1}) = 1.89 \times 10^{-7}$ | 20. $(4.5 \times 10^{-12}) \div (9 \times 10^{-7}) = 5 \times 10^{-6}$ |