

Standard form worksheet answers

Mathematics for A-level Science

Practice your understanding

Convert the following numbers into standard form:

1. $32\,000 = 3.2 \times 10^4$

2. $0.0006 = 6 \times 10^{-4}$

3. $104\,000 = 1.04 \times 10^5$

4. $18\,200\,000 = 1.82 \times 10^7$

5. $9\,230\,000 = 9.23 \times 10^6$

6. $0.000\,040\,5 = 4.05 \times 10^{-5}$

7. $0.002\,019 = 2.019 \times 10^{-3}$

8. $30\,200 = 3.02 \times 10^4$

Convert the following numbers from standard form into decimal notation:

9. $3.26 \times 10^4 = 32\,600$

10. $8.4 \times 10^{-3} = 0.0084$

11. $7.29 \times 10^7 = 72\,900\,000$

12. $1.26 \times 10^2 = 126$

13. $8 \times 10^{-6} = 0.000\,008$

14. $1.3 \times 10^8 = 130\,000\,000$

15. $2.3 \times 10^{-4} = 0.000\,23$

16. $5.001 \times 10^6 = 5\,001\,000$

17. Using the formula $\text{Circumference} = 2 \times 3.14 \times \text{radius}$, and given that the mean radius of the Earth is $6\,378\,000$ m, calculate the approximate circumference of the Earth leaving your answer in standard form to two significant figures.
 $= 40 \times 10^6$ m ($= 40 \times 10^3$ km)

18. There are $86\,400$ seconds in a day. Calculate the number of seconds in a year leaving your answer in standard form to two significant figures.
 $= 32 \times 10^6$ seconds

19. The current world population is approximately 7.4×10^9 people. The United Kingdom population accounts for 0.88% of the total world population. Using this information, approximate the number of people living in the United Kingdom leaving your answer as a decimal number.
 $= 65\,120\,000$