

Grade 8 - Scientific Notation - Quiz

Common Core 8.EE.A.3, 8.EE.A.4 · maths-pdf.fr/en/

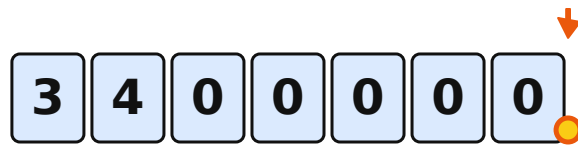
Name: _____ Class: _____ Date: ____/____/____

Pick the best answer for each of the 10 questions about scientific notation, comparing sizes and calculating with very large and very small numbers (Common Core 8.EE.A.3 and 8.EE.A.4). Read each question carefully, then read the explanation to learn from any mistake.

Grade 8 · Common Core State Standards: **8.EE.A.3, 8.EE.A.4**

Questions

Question 1



Digits of 3,400,000

Seven digits: 3 4 0 0 0 0 0.

Which is 3,400,000 in scientific notation?

- A. 3.4×10^6
- B. 3.4×10^5
- C. 34×10^5
- D. 3.4×10^{-6}

Question 2

Which is the scientific notation for 0.00091?

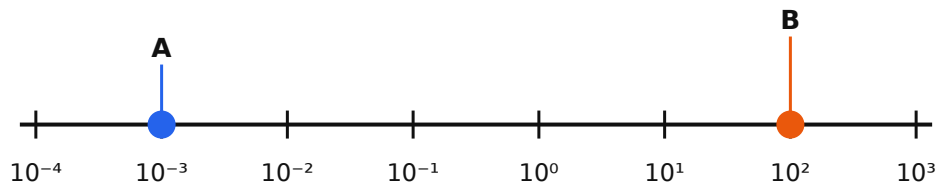
- A. 9.1×10^4
- B. 9.1×10^{-4}
- C. 9.1×10^{-3}
- D. 91×10^{-5}

Question 3

What is 5.1×10^4 in standard form?

- A. 5,100
- B. 510,000
- C. 51,000
- D. 0.00051

Question 4



Two numbers on a scale of powers of 10.

About how many times as large is B as A?

- A. 10^5
- B. 10^1
- C. 10^6
- D. 5

Question 5

Compute $(2 \times 10^3)(3 \times 10^4)$.

- A. 6×10^{12}
- B. 5×10^7
- C. 6×10^1
- D. 6×10^7

Question 6

Compute $\frac{8 \times 10^9}{4 \times 10^3}$.

- A. 2×10^3
- B. 2×10^{12}
- C. 2×10^6
- D. 4×10^6

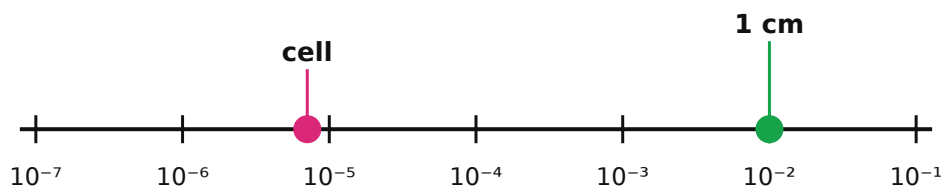
Question 7

Compute $6 \times 10^5 + 3 \times 10^4$.

- A. 9×10^5

- B. 9×10^9
- C. 6.3×10^4
- D. 6.3×10^5

Question 8



A cell and a centimeter.

A red blood cell is about 7×10^{-6} m. Which is the better unit to measure it in?

- A. micrometers
- B. kilometers
- C. miles
- D. meters

Question 9

Which number is NOT in scientific notation?

- A. 1.25×10^4
- B. 12.5×10^3
- C. 9×10^{-7}
- D. 1×10^0

Question 10

Sound travels 1.1×10^3 feet in one second. How far does it travel in 100 seconds?

- A. 1.1×10^6
- B. 1.1×10^5
- C. 1.1×10^1
- D. 11×10^5

Answers

1. **A** - Move the decimal point 6 places left. The front number must be between 1 and 10.
2. **B** - Move the decimal point 4 places right, so the exponent is -4. The form 91×10^{-5} has a front number that is too large.
3. **C** - Move the point 4 places right: 51,000.
4. **A** - The exponents differ by $2 - (-3) = 5$, so B is 100,000 times A.
5. **D** - Multiply $2 \times 3 = 6$ and add $3 + 4 = 7$. Multiplying the exponents is wrong.
6. **C** - Divide 8 by $4 = 2$ and subtract $9 - 3 = 6$.
7. **D** - Write 3×10^4 as 0.3×10^5 , then add: 6.3×10^5 .
8. **A** - The cell is millions of times smaller than a meter, so micrometers (10^{-6} m) fit best.
9. **B** - 12.5 is not between 1 and 10. It should be 1.25×10^4 .
10. **B** - Multiplying by 100 adds 2 to the exponent: $3 + 2 = 5$. The form 11×10^5 is not scientific notation.

Remember

- Form: $a \times 10^n$ with $1 \leq a < 10$.
- $93,000,000 = 9.3 \times 10^7$ and $0.00032 = 3.2 \times 10^{-4}$.
- To multiply, multiply the front numbers and add the exponents; to divide, subtract the exponents.
- To add or subtract, first write both numbers with the same power of 10.
- To tell how many times as large one value is, divide the two values.