

Name _____ Date _____

Performance Indicator: Multiply, divide, and square numbers expressed in scientific notation.

- Two objects are 2.4×10^{20} centimeters apart. A signal from one object travels to the other at a rate of 1.2×10^5 cm per second. How many seconds does it take the signal to travel from one object to the other?
A. 1.2×10^{15} B. 2.0×10^4 C. 2.0×10^{15} D. 2.88×10^{25}
- The point on a pin has a diameter of approximately 1×10^{-4} meters. If an atom has a diameter of 2×10^{-10} meters, about how many atoms could fit across the diameter of the point of a pin?
A. 50,000 B. 500,000 C. 2,000,000 D. 5,000,000
- A star constellation is approximately 3.1×10^4 light years from Earth. One light year is about 5.9×10^{12} miles. What is the approximate distance, in miles, between Earth and the star constellation?
A. 1.83×10^{17} B. 3.1×10^4 C. 1.9×10^8 D. 9.0×10^{16}
- If the mass of a proton is 1.67×10^{-24} gram, what is the number of grams in the mass of 1000 protons?
A. 1.67×10^{-27} B. 1.67×10^{-23} C. 1.67×10^{-22} D. 1.67×10^{-21}
- In 2000, about 1.4×10^4 ships passed through the Panama Canal. About 5.2×10^7 gallons of water flow out of the canal with each ship. About how many gallons of water flowed out of the canal with ships in 2000?
A. 7.28×10^{28} B. 2.69×10^{-4} C. 7.28×10^{11} D. 3.71×10^3

KEY:

1. C

2. B

3. A

4. D

5. C

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1. Simplify $(2.5 \times 10^4)(3.0 \times 10^{-15})$.

- A. 7.5×10^{19} B. 7.5×10^{11} C. 7.5×10^{-19} D. 7.5×10^{-11}

2. Evaluate $(3.2 \times 10^{-5})(5.4 \times 10^9)$. Express the result in scientific notation.

- A. 0.1728×10^6 B. 1.728×10^3 C. 1.728×10^5 D. 17.28×10^4

3. Express the result of $\frac{2.345 \times 10^6}{6.83 \times 10^3}$ in scientific notation.

- A. 383 B. 3.43×10^2 C. 3.43×10^3 D. 3430

4. Simplify the expression below, expressing your answer in scientific notation.

$$(4.3 \times 10^4)^2$$

- A. 1.849×10^8 B. 1.849×10^9 C. 1.849×10^{16} D. 1.849×10^{17}

5. Express the result of $\frac{9.12 \times 10^8}{3.8 \times 10^2}$ in scientific notation.

- A. 2.4×10^4 B. 2.4×10^{10} C. 2.4×10^{16} D. 2.4×10^6

KEY:

1. D

2. C

3. B

4. B

5. D