

Exam

Name _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Simplify. Write the answer with positive exponents.

1) $(-5)^6(-5)^2$

2) $s^4 \cdot s^8 \cdot s^2$

3) $(-2)^0$

4) $-(10)^0$

5) $\frac{-8x^{11}}{2x^6}$

6) $\frac{12x^{10}y^8z^5}{3x^6y^5z^4}$

7) $\frac{1}{5^{-2}}$

Simplify. Assume that variables in the exponent represent nonzero integers.

8) $(x^{3a+6})^8$

Simplify. Write the answer with positive exponents.

9) $\frac{35x^{-4}y^4}{5xy^{-3}}$

10) $\left(\frac{2x^4y^3}{z^2}\right)^3$

11) $\frac{(4xy^{-2})^{-2}}{2xy^3}$

12) $\left(\frac{4x^{-2}y^2}{12x^{-4}y^{-1}}\right)^3$

13) $\frac{(3xy^3z^{-2})^2}{(2x^6yz^{-3})^{-1}}$

14) $(4x^6y^6)^3(x^8y^2)^{-4}$

Perform the indicated operation. Write the answer in scientific notation.

15) $\frac{15.04 \times 10^{-7}}{4 \times 10^3}$

16) $(3 \times 10^7)(1.1 \times 10^{-4})$

17) $\frac{0.0014 \times 0.003}{0.007}$

18) $\frac{240,000,000,000,000}{0.00000006}$

Solve. Write the answer in scientific notation.

19) A particle is observed moving at 1.77×10^3 meters per second. Find the distance the particle would travel in 1.69×10^{-6} seconds.

20) If the mass of an object is 7.44408×10^{-12} tons and its density is 8.44×10^{-6} tons per cubic foot, find the volume of this object. (Use the formula $D = \frac{M}{V}$.)