Name _____

Tiny Worlds

Directions: Rewrite each negative exponent as a positive exponent or reciprocal expression. Then simplify if needed. Do not convert to decimal form unless the answer is already a simple fraction.

1. A microscope measures a particle as 4×10^{-3}millimeters.

Rewrite: _____ Final expression: _____

2. A water sample contains $7 \times x^{-2}$tiny particles per test unit.

Rewrite: _____ Final expression: _____

3. A computer stores a tiny timing value as $\frac{1}{2^{-5}}$seconds.

Rewrite: _____ Final expression: _____

4. A scientist records a small distance as $\frac{6y^{-3}}{1}$meters.

Rewrite: _____ Final expression: _____

5. A laboratory uses the expression $\frac{10^{-4}}{10^{-2}}$. Simplify using exponent rules. Write the final answer with positive exponents.

Rewrite: _____ Final expression: _____

6. A bacteria sample is modeled by $(m^{-2})^2$. Rewrite with positive exponents.

Rewrite: _____ Final expression: _____

7. A sensor measures a signal using $\frac{p^{-3}q^2}{q}$. Rewrite with positive exponents and simplify.

Rewrite: _____ Final expression: _____

8. A chemistry formula includes $\frac{8a^{-2}}{4a^{-5}}$. Rewrite with positive exponents and simplify.

Rewrite: _____ Final expression: _____