Chapter 1 Real Numbers

Lesson 1-5 Negative Exponents
Pages 47–48

13 **Simplify $y^{-1} \cdot y^4$.**

$$y^{-1} \cdot y^4 = y^{(-1+4)} \quad \text{Product of powers}$$
$$= y^3 \qquad \text{Simplify.}$$

19 **STEM The mass of a molecule of penicillin is 10^{-18} kilogram and the mass of a molecule of insulin is 10^{-23} kilogram. How many times greater is the mass of a molecule of penicillin than the mass of a molecule of insulin?**

To find how many times greater, divide 10^{-18} by 10^{-23}.

$$\frac{10^{-18}}{10^{-23}} = 10^{-18-(-23)} \qquad \text{Quotient of powers}$$
$$= 10^5 \text{ or } 100{,}000 \text{ times} \qquad \text{Simplify.}$$

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