

Module 3 – Exponents

Lesson 1 – Integral Exponents

Name _____

Find the product or quotient for each problem. Show all work.

Product Rule

1. $w^3 \times w^4 \times w^5$

2. $(a^4)(a^5)$

3. $2y \times 2y^2 \times 2y^4 \times 2y^6$

4. $3^2 \times 3^3$

Quotient Rule

1. $\frac{6^5}{6^3}$

2. $\frac{6x^7}{2x^4}$

3. $\frac{x^5 y^6}{xy^2}$

4. $\frac{a^4 b^3 c^2}{a^2 b^2 c^2}$

Power Rule

1. $(d^3)^6$

2. $(2^2)^4$

3. $(x^3)^5$

4. $(k^5)^4$

Power Rule for Products

1. $(x^2y)^4$

2. $(ph)^5$

3. $(2x^2y^3)^4$

4. $(2cd^4)^2(cd)^5$

Power Rule for Quotients

1. $\left(\frac{r}{q}\right)^6$

2. $\left(\frac{3x}{2x^4}\right)^3$

3. $\left(\frac{x^2y^2}{xy^3}\right)^4$

4. $\left(\frac{a^4b^3c^2}{a^2b^2}\right)^3$

Zero Exponents

1. k^0

2. ac^0

3. $3(ab^3)^0$

4. $\left(\frac{x^4 y^3 z^2}{x^2 y^2 z^2}\right)^0$

Negative Exponents

1. 6^{-2}

2. $(xy)^{-3}$

3. $(3a^0 b^2 c^{-4})^{-3}$

4. $(3^{-1} m^{-2} n^{-3} p^{-5})^3$