Math 9 Section 1.6 – Exponent Rules Part 1

Homework: Section 1.6 on Pg. 34; 1-3all,4-9left – Answers on Pg. 364

Write the following in repeated factor form, then as a single exponential. What do you notice?

$2^5 \times 2^3 =$ _____ = _____

Product Rule:

When we multiply two exponentials with the same _____ we can _____ the exponents and keep the _____ the same.

For example, write the following as a single exponential:

$5^2 \times 5^9 =$

$(-4)^6 \times (-4)^7 =$

$6^2 \times 6^4 \times (-6)^7 =$

Write the following in repeated factor form, then as a single exponential. What do you notice?

$\frac{2^5}{2^3} =$ _____ = _____

Quotient Rule:

When we divide two exponentials with the same _____ we can _____ the exponents and keep the _____ the same.

For example, write the following as a single exponential:

$5^9 \div 5^2 =$ $(-4)^7 \div (-4)^6 =$ $\frac{(-6)^9}{6^4 \times (-6)^3} =$

Proof for why $a^0 = 1$ and $a^1 = a$:

What happens if the bases are different?

Simplify: $\frac{(-4)^8 \times 3^6}{4^4 \times (-3)^3} =$