Multiplying Monomials

Multiplying Powers – Review: Expand and simplify problems 1-3 as shown in the example. Then answer questions 4 - 5. (This is a review of what you discovered in Day 5.)

Example: $(x^4)(x^4) = (x \bullet x \bullet x \bullet x)(x \bullet x \bullet x \bullet x) = x^8$

1) $(b^3)(b^4) =$

2) $(y^3)(y^2) =$

3) When I multiply two powers together of the same base, the _____ stays the same and I _____ the exponents.

4) $(y^4)(z^2)$ cannot be simplified because
_____
_____.

5) Explain why $3^2 + 3^3 \neq 3^5$.

Multiplying a Monomial by a Monomial: Expand and simplify problems 6-9 as shown by the given example. Then answer questions 10 - 12.

Example: $(x^3 y^2)(x^4 y) = (x \bullet x \bullet x \bullet y \bullet y)(x \bullet x \bullet x \bullet x \bullet y) = x^7 y^3$

6) $(ab^3 c^2)(a^2 b^4 c^3) =$

7) $(y^3)(y^2 z^4) =$

8) $\left(a^{-7}b\right)\left(a^2b^2\right)=$

9) $\left(2n^2\right)(4n)=$

10) Does the rule of "when I multiply two monomials together, I add the exponents" apply to questions 6-9 as well? Why or why not? (For example, does $(x^8y^8)(x^5y^5) = x^{8+5}y^{8+5} = x^{13}y^{13}$?)

11) How would you rewrite #8 so that it does not have a negative exponent? (Look back at your tables that you made on Day 3 – Exploring Negative Exponents to help you.)

12) Using what you reviewed in #11, rewrite the following without a negative exponent:

a) 6^{-3} =

b) $\dfrac{1}{x^{-2}} =$

c) $a^5 b^{-2} =$

d) $\dfrac{x^4}{y^{-6}} =$

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13) $\left(3x^{-4}y^3\right)\left(x^2y^2\right)=$

14) $(y^2z^3)(y^2z^4)(yz^2) =$

15) $\left(-2c^2d^3\right)\left(-2c^3d\right)=$

16) Rewrite #13 without a negative exponent.