Worksheet Level 3:

Concept # _____

Goals:

Apply the product rule for exponents

Multiply #s in Scientific Notation

Product Rule Practice:

1. $8^2 \cdot 8^3 = 8^{\square}$
2. $2^{\square} \cdot 2^6 = 2^9$
3. $a^{12} \cdot a^{\square} = a^{15}$
4. $x^{\square} \cdot x^5 = x^6$
5. $b^{-4} \cdot b^3 = b^{\square}$
6. $6^4 \cdot 6^{\square} = 6^2$

Simplify each expression.

10. $3x^2 \cdot 4x \cdot 2x^3$
11. $m^2 \cdot 3m^4 \cdot 6a \cdot a^{-3}$
12. $p^3q^{-1} \cdot p^2q^{-8}$
13. $5x^2 \cdot 3x \cdot 8x^4$
14. $x^2 \cdot y^5 \cdot 8x^5 \cdot y^{-2}$
15. $7y^2 \cdot 3x^2 \cdot 9$

Product Rule Practice #2

Simplify. Your answer should contain only positive exponents.

1) $4x^2 \cdot 2x^4$
2) $2v^3 \cdot 2v^0$
3) $4x^2 \cdot 4x \cdot 8x^0$
4) $5x^3 \cdot 3x^4$
5) $4n^2 \cdot 2n$
6) $4b^4 \cdot 8b^3 \cdot 3b^4$
7) $6x^2y^4 \cdot 7x^4y^3$
8) $8xy^3 \cdot 2xy^4$
9) $4a^0b^4 \cdot 8a^2 \cdot 6ba^3$
10) $4a^2 \cdot 2a^3b^3$