

Algebra I

4-4

Powers of Monomials

Laws of Exponents

- 1) $x^4 \cdot x^5 = x^9$
multiply, add powers
- 2) $(x^4)^3 = x^{12}$
multiply power outside parentheses
- 3) $(x^3 + x^2)^4 = \text{can't do}$
can't do if + or
- 4) $(2x^3y^2)^3 = 2^3x^9y^6 = 8x^9y^6$
- 5) $x^3 + x^4 = \text{can't do}$
- 6) $x^2 + x^3 = 2x^3$
adding — can't change

Evaluate if $x = 3$ and $y = 2$. (pg 156)

1a) $3x^3$
 $3(3)^3$
 $3(27)$
 81

b) $(3x)^3$
 $(3 \cdot 3)^3$
 9^3

c) $3^3 \cdot x^3$
 $27 \cdot (3)^3$
 $27 \cdot 27$
 729

Simplify.

5a) $c^5 \cdot c^2$
 c^7

b) $(c^2)^5$
 c^{10}

c) $(c^5)^2$
 c^{10}

Simplify.

21) $(2x^2)^3(2x)^4$
 $(2^3 \cdot x^2)(2^4 \cdot x^4)$
 $4x^2 \cdot 16x^4$
 $64x^6$

Find and simplify a) the sum and b) the product of the given monomials.

33) $(3x^3)^2 ; (2x^3)^3$
 $3^2x^6 ; 2^3x^6$
 $9x^6 ; 8x^6$

a) $9x^6 + 8x^6$
 $17x^6$

b) $9x^6 \cdot 8x^6$
 $72x^{12}$

Assignment:
Pg. 156
2-50 even