

8 - 1

Multiplying Monomials

monomial:

$$3x^2$$

~~$$3x + 7$$~~

$$2xy^5$$

constant:

$$7$$

$$-22$$

Exponent Properties

$$a^m \cdot a^n = a^{m+n}$$

$$(a^m)^n = a^{mn}$$

$$(ab)^m = a^m b^m$$

Ex: $(5x^7)(x^6)$

$$5x^{13}$$

Ex: $(4ab^6)(-7a^2b^3)$

$$-28a^3b^9$$

Ex: $[(3^2)^3]^2$

$$3^{12}$$

Ex: $(4ab)^2$

$$16a^2b^2$$

Ex: $(5a^3b^4)^2$

$$25a^6b^8$$

$$\begin{array}{ccc} 5^2 & (a^3)^2 & (b^4)^2 \\ 5 \cdot 5 & a^3 \cdot a^3 & b^4 \cdot b^4 \\ 25 & a^6 & b^8 \end{array}$$

Monomials are simplified when...

1. each base appears once
2. no powers of powers
3. simplify fractions

Ex: Simplify $(\frac{1}{3}xy^4)^2 [(-6y)^2]^3$.

$$\frac{1}{9}x^2y^8 \quad (36y^2)^3$$

$$46,656y^6$$

$$5184x^2y^{14}$$

Ex: Simplify $(2ag^2)^4 (3a^2g^3)^2$.

$$16a^4g^8 \cdot 9a^4g^6$$

$$144a^8g^{14}$$



Homework:

p. 413 #22 - 38 even