Algebra 1 7.1
Multiply monomials using the properties of exponents
Simplify expressions using properties of exponents

monomial
constant
linear
nonlinear
exponent
base

activity: LG triangle puzzle (if time)

KeyConcept Power of a Power

Words	To find the power of a power, multiply the exponents.
Symbols	For any real number a and any integers m and p, $(a^m)^p = a^{m \cdot p}$.
Examples	$(b^3)^5 = b^{3 \cdot 5}$ or b^{15} $\quad$ $(g^6)^7 = g^{6 \cdot 7}$ or g^{42}

$(b \cdot b \cdot b)(b \cdot b \cdot b)(b \cdot b \cdot b)(b \cdot b \cdot b)(b \cdot b \cdot b)$

b^{15}

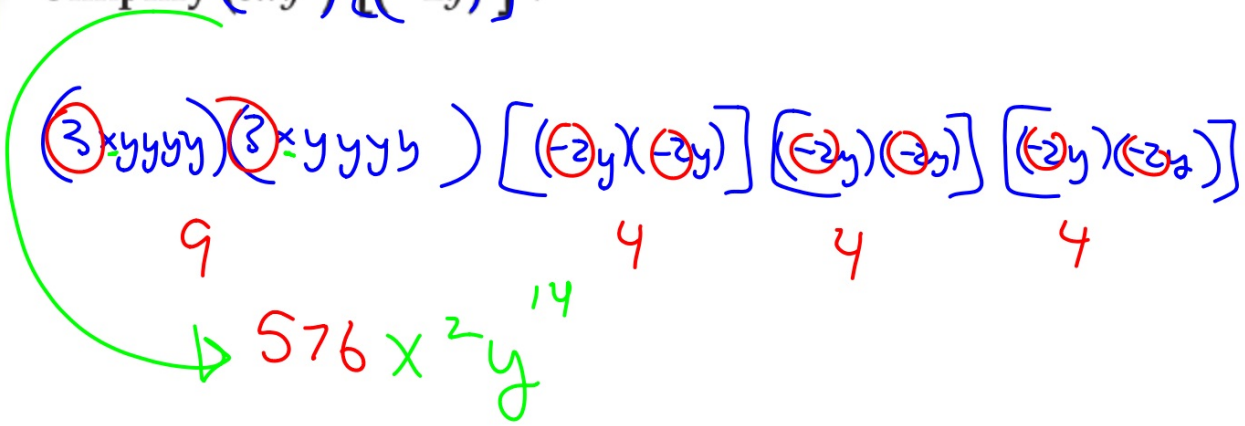
KeyConcept Simplify Expressions

To simplify a monomial expression, write an equivalent expression in which:

- each variable base appears exactly once,
- there are no powers of powers, and
- all fractions are in simplest form.

Example 5 Simplify Expressions

Simplify $(3xy^4)^2[(-2y)^2]^3$.

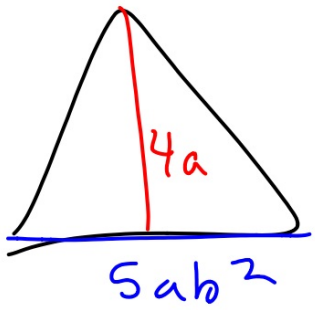


Triangle puzzles

4B. Express the area of a triangle with height $4a$ and base $5ab^2$ as a monomial.

$A = \frac{1}{2} \cdot b \cdot h$

$A = \frac{b \cdot h}{2}$



$A = \frac{1}{2} \cdot 5ab^2 \cdot 4a$

$= \frac{1}{2} \cdot 5a\cancel{b}\cancel{b} \cdot 4a = 10a^2b^2$

Order of operations...

GuidedPractice

5. Simplify $\left(\frac{1}{2}a^2b^2\right)^3\left[(-4b)^2\right]^2$.

$\left(\frac{1}{2}aabb\right)\left(\frac{1}{2}aabb\right)\left(\frac{1}{2}aabb\right)\left[(-4b)(-4b)\right]\left[(-4b)(-4b)\right]$

$32a^6b^{10} = 32b^{10}a^6$

Circle song?

$$A = \pi r^2$$

$$C = \pi d$$

Triangle puzzle