Properties

Commutative Property: changes the order

$a + b = b + a$ $\qquad$ $(3a \cdot 7a) \cdot 6 = 6 \cdot (3a \cdot 7a)$

Associative Property: changes the grouping

$(a + b) + c = a + (b + c)$

$3(4 \cdot 2z) = (3 \cdot 4) \cdot 2z$

Distributive Property: multiply the outside number by everything inside the parentheses.

$3(a + 2) = 3a + 6$

Inverse Property: adds out-opposites-equals zero

divides out-reciprocals-equals one

$\frac{1}{3} \cdot 3 = 1$ $\qquad$ $7 + (-7) = 0$

Distributive Property & Combining Like Terms.

Term- a #, variable, or product of #'s and variables.

Like terms- terms that have the same variables, with the exponents.

Coefficient- # in front of the variable.

Combining Like terms:

Simplify:

1) $2x + 9x$ $\qquad$ 2) $3a^2 + 14a^2$ $\qquad$ 3) $5x + 2x^2 - x$

Distributive Property:

1) $3(x + 4)$

2) $3(2x + 6) + 4$

3) $27(2b - \frac{1}{3}) - 5b$

4) $2(a - 3b + 2c)$

Simplify each fractional expression:

1) $\frac{15z + 20}{5}$

2) $\frac{30x - 6}{-2}$

Simplify each Expression:

1) $6y + 2(4y + 6)$

2) $1 - (2x + 4)$

3) $4b - 3(b - 6)$

4) $7(ac + 2b) + 2ac$

5) $7x + (-2x + 4)$

6) $3(x + 2y) + 4(3x + y)$