1. Simplify: $-3 + [2(5^2 - 21)] - 15$

$[2(25-21)]$

$[2(4)]$

$-3 + 8 - 15$

$5 - 15$

$\boxed{-10}$

2. Simplify: $10 - [-3(2 + 4)^2]$

$[-3(6)^2]$

$[-3(36)]$

$10 - [-108]$

$\boxed{118}$

Evaluate if $x = -4$ $y = 3$ and $z = 7$

3. $12x - z$

$12(-4) - 7$

$-48 - 7 = \boxed{-55}$

4. $x^2 + 5$

$(-4)^2 + 5$

$16 + 5$

$\boxed{21}$

5. $-9y + 3x + z$

$-9(3) + 3(-4) + 7$

$-27 + (-12) + 7$

$-39 + 7$

$\boxed{-32}$

The Distributive Property

Let a, b, and c be real numbers.

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

Example: $5(2 + 3) = 5(2) + 5(3)$

$10 + 15$

25

Write in simplest form using the distributive property.

1. $3(x + 4)$

   $3x + 12$

2. $-5(x - 3)$

   $-5x + 15$

3. $4(x + 2)$

   $4x + 8$

4. $-7(5b - 4)$

   $-35b + 28$

5. $11(2t + 3)$

   $22t + 33$

6. $0.5(4x - 6)$

   $2x - 3$

Distribution of -1

Examples: $-1(3x + 7)$

$-3x - 7$

$-(-2x - 5)$

$2x + 5$

You try:

1. $-(20 + d)$

   $-20 - d$

2. $-(-5 - 4y)$

   $5 + 4y$

3. $-(x + 12)$

   $-x - 12$

4. $-1(x - 8)$

   $-x + 8$

Rewriting Fraction Expressions

Simplify: $\frac{8x + 4}{2}$

Re-write as $\frac{8x}{2} + \frac{4}{2}$

Divide or Simplify if possible $4x + 2$

Examples:

1. $\frac{4y - 12}{2}$

   $2y - 6$

2. $\frac{18 - 9x}{3}$

   $6 - 3x$

3. $\frac{25 - 8t}{5}$

   $5 - \frac{8}{5}t$

4. $\frac{19 - 24h}{8}$

   $\frac{19}{8} - 3h$

5. $\frac{42w + 14}{7}$

   $6w + 2$

6. $\frac{22 - 2n}{2}$

   $11 - n$

Combining Like Terms

Vocabulary:

Term: is a number, a variable, or the product of a number and one or more variables.

Ex. 5, x, 3xy, $5z^2$

Constant: is a term that has no variables.

Ex. 10, 40, 5, 6

Coefficient: is a numerical factor of a term.

Ex. $5x^2$, 5 is the coefficient.

Like terms: have the same variable factors with the same exponent.

Terms	7a and -3a	$4x^2$ and $12x^2$	6ab and -2a
Variable factors	a and a	x^2 and x^2	ab and a
Like terms	yes	yes	no

Simplify.

(distributive property and combining like terms)

1. $7y + 10y$ $\quad 17y$

2. $5(x + 3) + 2(x - 9)$

$5x + 15 + 2x - 18$

$7x - 3$

3. $9 - xy^2 + 4xy^2 - 12$

$3xy^2 - 3$

You Try:

1. $4a - 7 + 3a - 5$

$7a - 12$

2. $5(n + 5) - 2(n - 4)$

$5n + 25 - 2n + 8$

$3n + 33$

3. $5x^2y + 3x - 7 + 8x^2y + 10$

$13x^2y + 3x + 3$

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