Lesson 6 -Adding & Subtracting Algebra

Review of adding and subtracting integers

Sec.1 ●——▶ No Double signs ●——▶ Sec.2

$(+2) + (+5) =$ ——▶ $2 + 5 = +7$

$(-4) + (-2) =$ ——▶ $-4 - 2 = -6$

$(+2) - (-7) =$ ——▶ $+2 + 7 = +9$

$(-3) - (+2) =$ ——▶ $-3 - 2 = -5$

$(-2) - (-7) =$ ——▶ $-2 + 7 = +5$

$(-3) - (-3) =$ ——▶ $-3 + 3 = 0$

$(-6) - (-2) =$ ——▶ $-6 + 2 = -4$

ADDITION & SUBTRACTION

In Algebra you can only add or subtract like terms (same variable and exponent).
Find the difference or addition of the coefficients.

$2a + 3a$ $-3a - a + b$ $n + n$ $-7x + y - 3y$

$5a$ $-4a + b$ $2n$ $-7x - 2y$

$3a - a$ $-5a + a - b$ $-6c - 2c$ $2n + 4 - 4n + 3$

$2a$ $-4a - b$ $-8c$ $-2n + 7$

Negative signs outside the bracket.

A negative sign ouside the bracket changes the signs inside the
bracket to their opposite when we remove the brackets.

$(3c + 4) - (2c + 1)$ $-(2f + 3) - (6f + 3)$

Change $-2f - 3 - 6f - 3$
to opposite $-8f - 6$

Examples

$-4x^3 + 5x^2 + 6x^3 - 4x + 7x^2 - 7x$

$2x^3 + 12x^2 - 11x$

Final
Answer
— NO Brackets
— Squish like
        terms
— clean
     algebra

$-(x - 5y) - 7x - 2y$

$-x + 5y - 7x - 2y$

$-8x + 3y$

$\dfrac{2}{3}x - \dfrac{4}{5}y + \dfrac{3}{4}x + \dfrac{3}{10}y$

common Denominator

$\dfrac{2}{3}x + \dfrac{3}{4}x \quad\bigg|\quad -\dfrac{4}{5}y + \dfrac{3}{10}y$

$\dfrac{8}{12}x + \dfrac{9}{12}x \quad\bigg|\quad -\dfrac{8}{10}y + \dfrac{3}{10}y$

$\dfrac{17}{12}x \quad\qquad\quad -\dfrac{5}{10}y$

$1\dfrac{5}{12}x \quad\qquad\quad -\dfrac{1}{2}y$

Change to
Decimal

$.67x - .8y + .75x + .3y$

$1.42x - .5y$

Same

add & subtract
algebra

NAME: _____

Parent's Signature_____

Simplify the expressions. Show your work.

1. $2v + 7v$

2. $12b - 9b$

3. $15z - 10z + 2z$

4. $(6f - 5) + (4f - 8)$

5. $7s + 6 - (9s + 9)$

6. $(8c - 5) - (-4c + 3)$

7. $(9 - 6x) - (4 - 3x)$

8. $-(x + 7) + (2x - 8)$

9. $(-a + b) - (a - b)$

10. $(2x - 9) + (x - 7)$

11. $3.4v + 1.2w - 7.8v - 4.1w$

12. $-4x^3 + 5x^2 + 6x^3 - 4x + 7x^2 - 7x$

13. $(-x - 5y) - (2x - 9y)$

14. $\frac{2}{3}x - \frac{4}{5}y + \frac{3}{4}x + \frac{3}{10}y$

15. $(a + 5b) - (-a + 3b) - (2a - 5b)$

Simplifying Expressions by Combining Similar Terms

1. _____ 3 + 9a − 6a = _____

2. _____ 10a + −4a − 2a = _____

3. _____ 7a + −3b + 6a = _____

4. _____ −16a + 7a = _____

5. _____ 8a + 7 + 5a − 12 = _____

6. _____ −3a + 2 + 14a + 29 = _____

7. _____ 15 + 12a − 18 + 3 − 8a = _____

8. _____ −9 + 9a + 9 − a = _____

9. _____ 17a + 9 − 11a − 16 = _____

10. _____ −13a + 7b + 4a − 7b = _____

11. _____ −12a + 6 + 25a − 11 = _____

12. _____ 5a + 7b − a + 13b = _____

13. _____ 9a − 15 + 12 − 18a + 3 = _____

14. _____ 10a + 15b + 8 − 2a − 4b + 1 = _____

15. _____ 9a + 4b − 5c − 1 − 3a + 4b + 5c = _____

16. _____ 16a − 10a − 2a = _____

17. _____ 12b + 3b − 7a − 5b − 2a − 10b = _____

18. _____ 7a − 7b − a + 13b − 6b − 7 = _____

19. _____ 4a − 2 − 3a − 8 = _____

Answer Bank

N. −9a

E. 6a − 7

A. 4a + 20b

T. 11a + 31

D. 8a + 11b + 9

S. 13a − 5

I. 13a − 3b

K. 8a

M. 6a + 8b − 1

O. 4a

C. 3a + 3

Y. a − 10