Terms of an Algebraic Expression or Sentence:

Any multiplication between a constant value and any number of variables. (Including no variables)

Examples:

$2x+5 \rightarrow$ *Terms are*: $2x$ & 5

$x-3 \rightarrow$ *Terms are*: x & -3

$5a+c-8 \rightarrow$ *Terms are*: $5a$, c & -8

$-3x^2-10x+1 \rightarrow$ *Terms are*: $-3x^2$, $-10x$ & 1

Like Terms are those that have equivalent variable parts.

Examples:

$3x+10x \rightarrow$ *Like Terms are*: $3x$ & $10x$

$5a-2c \rightarrow$ *There are no like terms*

$n+2-8n \rightarrow$ *Like Terms are*: n & $-8n$

$6c-4-c-7 \rightarrow$ *Like Terms are*: $6c$ & $-c$ *and* -4 & -7

$4x^3+2x^2-3x+11 \rightarrow$ *There are no like terms*

$x^2y-9xy^2-3x^2y \rightarrow$ *Like Terms are*: x^2y & $-3x^2y$

$m+6-n+8-7m \rightarrow$ *Like Terms are*: m & $-7m$ *and* 6 & 8

The **Coefficient** of the terms are the constant value part

Examples:

$5a-2c \rightarrow$ *Coefficients are*: 5 & -2

$n+2-8n \rightarrow$ *Coefficients are*: 1, 2 & -8

$6c-4-c-7 \rightarrow$ *Coefficients are*: 6, -4, -1 & -7

$4x^3+2x^2-3x+11 \rightarrow$ *Coefficients are*: 4, 2, -3 & 11

$-\frac{3}{2}T+\sqrt{5}\,W-\frac{Z}{9} \rightarrow$ *Coefficients are*: $-\frac{3}{2}$, $\sqrt{5}$ & $-\frac{1}{9}$

Note: $N = 1\cdot N$ & $-N = -1\cdot N$

Like Terms can be combined (simplified) by combining the coefficients.

Examples:

$3x+2x$	$N-2M+5N-M$	$4A+10-A-15$	$-6x^2-x+2x^2-5x+3$
$(3+2)x$	$(1+5)N+(-2-1)M$	$(4-1)A+(10-15)$	$(-6+2)x^2+(-1-5)x+3$
$5x$	$6N-3M$	$3A-5$	$-4x^2-6x+3$

$5+2(x+3)$	$4x-5(2x-7)$	$20-(5y+6)$	$a+3(4a+c)-8c$
$5+2x+6$	$4x-10x+35$	$20-5y-6$	$a+12a+3c-8c$
$2x+11$	$-6x+35$	$-5y+14$	$13a-5c$

$2(x-4)+9(3x+6)$	$10(x+4y)-(3x-y)$	$-3(2m-5n)+4(9n-8)-2(10m+7)$
$2x-8+27x+54$	$10x+40y-3x+y$	$-6m+15n+36n-32-20m-14$
$29x+46$	$7x+41y$	$-26m+51n-46$

Simplify each expression.

1. $N-10N+6N$ **2.** $6H+12-10H-5$ **3.** $x-2+4x-9x-10$ **4.** $y^3-8y^2-6y^3+5y^2$

5. $6(t-5)-12$ **6.** $8w-(w-8)$ **7.** $(x^2-2x-9)+(x^2-x+27)$ **8.** $x-(-4x^2+2x-10)+3$

9. $-6(4A+3c-1)+24A+9$ **10.** $8(w+4)-3(2w+9)$ **11.** $-4(c-5)-(3w-8)$

12. $5.2x+1.2(2x+5)$ **13.** $\frac{1}{2}x-\frac{1}{3}(9x-2)$ **14.** $-35-12(2.5x-3)$

15. $-5(2x-4)+3(x+7)+5x$ **16.** $2(x^2+x-4)-(5x^2-3x+2)-5$

17. Subtract $3x-1$ from $2x+6$

18. Add $-2n+5m-4$ to $n-7m+2$

19. $2x^3y^2-5x^2y^3+10x^3y^2$

20. $-(2x^2y+3xy-10xy^2)+4(xy^2-8xy+2x^2y)$

21. $n-10n+3n$

22. $10w+9-7w-15$

23. $-3h+11h-4+6h-h$

24. $7x^5+x^5-10x^5$

25. $8(m-12)$

26. $5(a+4)-30$

27. $-5(2x-7y+10)$

28. $-(-9j+k-1)$

29. *Subtract* $6x-4$ *from* $2+x$

30. $-5(4x+6)-8x$

31. $4(10x-1)-(x-6)$

32. $-15m-(10-8m)$

33. *Subtract* $-10+6y-x$ *from* $18-15y$

34. $12y+9(2x-7)-3(y-2)$

35. $18-10(6a-4)-(3c-1)$

36. $2(a-3)-5(7c-4)+30c$

37. $3x^2y-15xy^2+10xy+12xy^2-x^2y$