Simplifying Algebraic Expressions

Thinking Platform

Look at the following expressions.

Think! To which number or letter does the '+' sign belong? Why?

$6 + 3$ $a + b$

Think! To which number or letter does the '–' sign belong? Why?

$6 - 3$ $a - b$

An operation sign precedes a number or letter. Therefore, in the expressions above, the '+' and '–' signs belong to '3' and '*b*'. For '6' and '*a*', the operation sign is '+'. Because both are the first terms in the expressions, the '+' sign is omitted.

Evaluate. Circle the correct answer.

1. $7d + 4 - 2d + 5$

   Answer: (a) $5d + 9$ or (b) $5d - 1$

2. $7d - 4 - 2d + 5$

   Answer: (a) $5d - 9$ or (b) $5d + 1$

3. $7d - 4 - 2d - 5$

   Answer: (a) $5d + 9$ or (b) $5d - 9$

Think! How can you be more careful in adding and subtracting algebraic expressions?

Notes

Areas of Difficulty

Many children have difficulty deciding to which term an operation sign belongs. For example, in $a - b$, some children assume that the '–' belongs to both *a* and *b*, while others think that it belongs to *a* instead of *b*. To avoid this confusion, especially in expressions with three or more terms, the child can box up the terms and then group the like terms together before adding or subtracting.

$5n + 5 - 2n + 3 =$ | $5n$ | $+5$ | $-2n$ | $+3$ |

$=$ | $5n$ | $-2n$ | $+5$ | $+3$ | $= 3n + 8$