ADDITION AND SUBTRACTION

FACT 1: The orders of addition and subtraction are interchangeable. Therefore, they may simply be carried out from left to right.

$10 - 5 + 8 - 4 = 5 + 8 - 4 = 13 - 4 = 9$
$3 + 9 - 4 + 7 = 12 - 4 + 7 = 8 + 7 = 15$

FACT 2: The "no sign" in front of the first number is actually a "plus" sign. This can be seen by adding 0 in front, which does not change the sum.

$9 + 3 = 0 + 9 + 3$
$9 - 3 = 0 + 9 - 3$

FACT 3: The numbers may be moved around, but only with their operation signs in front of them.

$9 + 3 = 0 + 9 + 3 = 0 + 3 + 9 = 3 + 9$
$9 - 3 = 0 + 9 - 3 = 0 - 3 + 9 = -3 + 9$

NOTE: $3 = 0 + 3$; and $-3 = 0 - 3$

FACT 4: The numbers with the same operation may be gathered and totaled first.

$9 - 5 + 3 - 4 - 6 + 7 + 9 - 8 = (9 + 3 + 7 + 9) - (5 + 4 + 6 + 8)$
$= 28 - 23$
$= 5$

FACT 5: Same numbers with opposite signs pair up to zero. They may simply be canceled out.

$3 - 3 = 0$; $4 - 4 = 0$; $8 - 8 = 0$; therefore,

$8 - 5 + 3 - 4 - 3 + 7 + 4 - 8 = 8 - 5 + \cancel{3} - 4 - \cancel{3} + 7 + 4 - 8$
$= 8 - 5 - \cancel{4} + 7 + \cancel{4} - 8$
$= \cancel{8} - 5 + 7 - \cancel{8}$
$= 7 - 5$
$= 2$

1. Compute the following.

(a) $7 - 4 + 2$ (d) $9 - 3 - 4 + 1$ (g) $3 - 5 - 2 + 9 - 3 - 4 - 5 + 7$
(b) $7 + 5 - 8$ (e) $4 - 5 - 7 + 13$ (h) $9 - 3 - 6 - 2 + 8 - 3 + 7 - 2$
(c) $2 + 6 - 5$ (f) $6 - 9 + 15 - 5$ (i) $7 - 6 - 5 - 11 + 5 + 9 - 2 + 7$

Check your answers:
(a) 5 (b) 4 (c) 3 (d) 3 (e) 5 (f) 7 (g) 0 (h) 8 (i) 4

End of Lesson