ORDER OF OPERATIONS

When calculating expressions, we follow the order of operations.

Order of Operations

1. Simplify the brackets.
2. Then simplify powers.
3. Multiply and Divide.
4. Then Add and Subtract.

B – Brackets
E – Exponents (powers)
D – Division
M – Multiplication
A – Addition
S – Subtraction

Example 1

Simplify
$-3(2-4)-(-2+4)$

$= -3(-2) - (2)$

$= 6 - 2$

$= 4$

Example 2

Simplify
$(-2)(4)+(-3)^2$

$= (-2)(4) + 9$

$= -8 + 9$

$= 1$

Examples

a) Is $3 + 6 \times 2 - 8$ equal to 7 or 10?

Use BEDMAS to help you find the answer.

$= 3 + 12 - 8$

$= 15 - 8$

$= 7$

b) How do you evaluate $\frac{[11+7]}{[9-3]}$?

$= \frac{18}{6}$

$= 3$

* complete BEDMAS on the top & bottom separately until you have one # left on top & one # in the bottom
* then divide

SIMPLIFY – USE THE ORDER OF OPERATIONS

a) $5-(3-4)$

$= 5-(-1)$

$= 5+1$

$= 6$

b) $(-3-2)^2-(2+4)^2$

$= (-5)^2 - (6)^2$

$= 25 - 36$

$= -11$

c) $(4-3)+2(3-4)$

$= 1 + 2(-1)$

$= 1 - 2$

$= -1$

d) $2(-3)^2 - 4(-2)$

$= 2(9) - 4(-2)$

$= 18 + 8$

$= 26$

e) $5 + 12 \times 8 + 30 \div 6 + 8 - 5$

$= 5 + 96 + 30 \div 6 + 8 - 5$

$= 5 + 96 + 5 + 8 - 5$

$= 101 + 5 + 8 - 5$

$= 106 + 8 - 5$

$= 114 - 5$

$= 109$

f) $-(3-5) \times (2-4)$

$= -(-2) \times (-2)$

$= 2 \times (-2)$

$= -4$

g) $(4-2)^2 \times 6 \div 8$

$= (2)^2 \times 6 \div 8$

$= 4 \times 6 \div 8$

$= 24 \div 8$

$= 3$

h) $\sqrt{3(18-6)}$

$= \sqrt{3(12)}$

$= \sqrt{36}$

$= 6$

i) $4 + [6 - (9-4)]$

$= 4 + [6 - (5)]$

$= 4 + 1$

$= 5$

j) $3(-2+4)^3 - 2(-4+1)^2$

$= 3(2)^3 - 2(-3)^2$

$= 3(8) - 2(9)$

$= 24 - 2(9)$

$= 24 - 18$

$= 6$