**Integers**

**Number Line**

The illustration below shows numbers on a number line.



**Operations on Integers**

**Addition and Subtraction**

It should be noted that:  
a) **+ -**  =  **-**  
b) **- +**  =  **-**  
c) **- -**  =  **+**  
d) **+ +**  =  **+**  
  
As a student, please try: ( *For this questions, please draw a number line as the one shown above from -14 to +14* )  
i) 4 + 8  
ii) -4 + 8  
iii) 4-(-8)  
iv) 4-8  
  
(*Check solution below*)

i) 4 + 8  
This can be represented as: +4 + (+8).  
Using a number line, start at position 0. Move 4 steps to the right and further 8 steps to the right. What do you get?  
If your answer is **+12**, you are correct.  
  
ii) -4 + 8 is the same as -4 + (+8)  
On the number line, start at position 0, move 4 to the left and then move 8 steps to the right.  
Your answer should be **+4** or simply, 4  
  
iii) 4 - (-8) is the same as +4 - (-8).   
Remember, - - = +, hence the above problem is the same as 4 + 8  
On the number line, start at position 0. Move 4 steps to the right and a further 8 steps to the right.  
Your answer should be **+12** or simply, 12  
  
iii) 4 - 8 is the same as +4 - (+8).   
Remember, - + = -, hence the above problem is the same as 4 - 8  
On the number line, start at position 0. Move 4 steps to the right and a then 8 steps to the left.  
Your answer should be -4

**Multiplication and Division**

Rules of Multiplication and Division:  
**Positive** x **positive** = **positive**  
**Positive** x **negative** = **negative**  
**negative** x **negative** = **positive**  
**negative** x **positive** = **negative**  
**Positive** ÷ **positive** = **positive**  
**Positive** ÷ **negative** = **negative**  
**negative** ÷ **negative** = **positive**

**Order of Operations**

Remember **BODMAS**? This rule is followed in the order of operations.  
**BODMAS** stands for **B**racket, **O**f, **D**ivision, **Mu**ltiplication, **A**ddition, **S**ubtraction  
  
Example: Solve 4 x 2(10-4) + 9 ÷ 3 - 10

Using BODMAS  
= 4 x 2(10 - 4) + 9 ÷ 3 - 10  
= 4 x 2(6) + 9 ÷ 3 - 10  
= 4 x 12 + 9 ÷ 3 - 10  
= 4 x 12 + 3 - 10  
= 48 + 3 - 10  
= 51- 10  
= 41