GRADE 8 – WORKSHEET 1

TOPIC: INTEGERS

KEYWORDS:

NEGATIVE NUMBERS – Is a number that is less than zero.

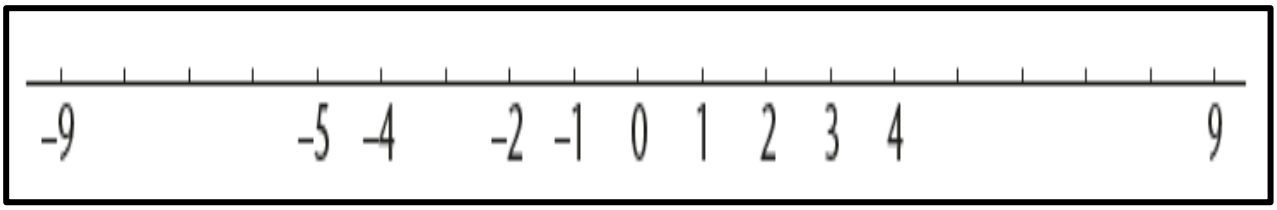
INTEGERS – Are positive and negative numbers.

NATURAL NUMBERS – Are the positive numbers integers used for counting and ordering.

ASCENDING ORDER – Means from smallest to greatest.

DESCENDING ORDER – Means from greatest to smallest.

Complete the following number line.



1	Use the number line above to replace the ☐ with the correct relationship sign: Fill in $<$; $>$ or $=$
1.1	-3 ☐ -5
1.2	-7 ☐ -4
1.3	-5 ☐ 8
1.4	0 ☐ -5
1.5	5 ☐ -5
1.6	5 ☐ -2
1.7	-2 ☐ 4
1.8	-7 ☐ 2

1.9	$-15 \square 5$
1.10	$19 \square -5$
2	Arrange these numbers in ascending order:
2.1	$0;\ -4;\ 5;\ -5;\ -8$
2.2	$7;\ -6;\ -1;\ 3;\ -5$
2.3	$3;\ -5;4;\ -2;1;\ -6$
2.4	$-5;\ -4;0;\ -10;\ -6;\ -9;\ -8$
2.5	$-136;\ -105;-162;\ -129;\ -144;\ -117;\ -153$
3	Arrange these numbers in descending order:
3.1	$-1;1;0;2;\ -2$
3.2	$-3;\ -5;3;5;4;\ -4$
3.3	$-2;\ -5;\ -7;\ -4;\ -9$
3.4	$41;54;\ -31;\ -79;57$
3.5	$43;\ -54;\ 44-55;\ -37;22;52$
4	Calculate the following. Use the number line to guide you.
4.1	$-5+5=$
4.2	$10-12=$
4.3	$-7+2=$
4.4	$7-5=$
4.5	$-6-2=$

4.6	$-5-2+3=$
4.7	$-6+8-7=$
4.8	$9-11+2=$
4.9	$10-6+2=$
4.10	$9-4-2=$

MULTIPLY WITH INTEGERS

You can summarise the sign rules for MULTIPLICATION as follows:

$= \boldsymbol{a\ positive\ integer} \times \boldsymbol{a\ positive\ integer}$

$= \boldsymbol{a\ positive\ integer, for\ example}:$

$= \mathbf{3} \times \mathbf{2} = \mathbf{6}$

$= \boldsymbol{a\ positive\ integer} \times \boldsymbol{a\ negative\ integer}$

$= \boldsymbol{a\ negative\ integer, for\ example}:$

$= \mathbf{3} \times \mathbf{-2} = \mathbf{-6}$

$= \boldsymbol{a\ negative\ integer} \times \boldsymbol{a\ positive\ integer}$

$= \boldsymbol{a\ negative\ integer, for\ example}:$

$= \mathbf{-3} \times \mathbf{2} = \mathbf{-6}$

$= \boldsymbol{a\ negative\ integer} \times \boldsymbol{a\ negative\ integer}$

$= \boldsymbol{a\ positive\ integer, for\ example}:$

$= \mathbf{-3} \times \mathbf{-2} = \mathbf{6}$

5	Calculate the following:
5.1	$\mathbf{-6} \times \mathbf{4} =$
5.2	$\mathbf{5} \times \mathbf{3} =$
5.3	$\mathbf{-4} \times (\mathbf{-6}) =$

5.4	$\mathbf{3 \times -4 =}$
5.5	$\mathbf{-4 \times -5 =}$
5.6	$\mathbf{2 \times (-3) \times (-5) =}$
5.7	$\mathbf{-4 \times (-1) \times -9 =}$
5.8	$\mathbf{-5 \times (-4) \times 3 \times (-2) =}$
5.9	$\mathbf{-2 \times (-3) \times (-2) \times (-3) \times (-5) =}$
5.10	$\mathbf{5 \times (-2) \times (-1) \times (-2) \times (-3) =}$

DIVIDE WITH INTEGERS

You can summarise the sign rules for DIVISION as follows:

$= \boldsymbol{a\ positive\ integer \div a\ positive\ integer}$

$= \boldsymbol{a\ positive\ integer, for\ example}$:

$= \mathbf{6 \div 2 = 3}$

$= \boldsymbol{a\ positive\ integer \div a\ negative\ integer}$

$= \boldsymbol{a\ negative\ integer, for\ example}$:

$= \mathbf{6 \div -2 = -3}$

$= \boldsymbol{a\ negative\ integer \div a\ positive\ integer}$

$= \boldsymbol{a\ negative\ integer, for\ example}$:

$= \mathbf{-6 \div 2 = -3}$

$= \boldsymbol{a\ negative\ integer \div a\ negative\ integer}$

$= \boldsymbol{a\ positive\ integer, for\ example}$:

$= \mathbf{-6 \div -2 = 3}$

6	Calculate the following:
6.1	$\mathbf{-16 \div 2 =}$

6.2	$25 \div (-5) =$
6.3	$-44 \div (-11) =$
6.4	$20 \div (-5) =$
6.5	$-20 \div 5 =$
6.6	$-20 \div (-4) =$
6.7	$30 \div (-5) \div (-3) =$
6.8	$-20 \div (-5) \div (-2) =$
6.9	$-12 \div (-2) \div 3 =$
6.10	$-67 \div (-1) =$

CALCULATIONS WITH ALL FOUR OPERATIONS

Before you can solve problems that involve multiple operations with integers, you need to revise the order of operations. When a mathematical problem includes more than one operation, you need to use the following order.

B - Brackets

O - Other operations

D - Division

M - Multiplication

A - Addition

S - Subtraction

7	Calculate the following:
7.1	$(-5 + 3) \times (-4) =$

7.2	$-5+3\times(-4)=$
7.3	$(-6+4)\times 3=$
7.4	$-6+4\times 3=$
7.5	$(-3-5)\times(-2)=$
7.6	$-3-5\times(-2)=$
7.7	$(10-8)\div(-2)=$
7.8	$10-8\div(-2)=$
7.9	$4\times 6-6=$
7.10	$-2\times 3-3$
7.11	$-5\times(-8)\div(-2)=$
7.12	$16\div(-4)-12=$
7.13	$-25\div 5+(-8)=$
7.14	$30\div(-6)-(-2)=$
7.15	$20-6\times 5=$
7.16	$-20+14\div 2=$
7.17	$-15+4\times -3=$
7.18	$-25+13-(-7)=$
7.19	$-4\times(-6)+8\times(-2)=$
7.20	$5\times(-3)-12\div 3=$