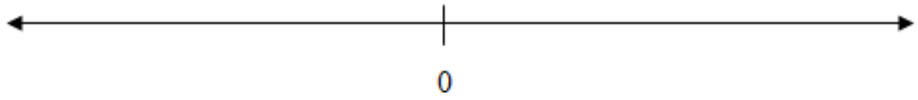
INTEGERS

1. Write the following integers in increasing order, represent them graphically, and calculate the additive inverse and absolute values of the numbers:

8, −6, 5, 3, −2, 4, −4, 0, 7



2. Write the following integers graphically in increasing order and calculate their opposite and their absolute values: **−4, 6, −2, 1, 5, 0, 9**

3. A Roman emperor was born in 63 B.C. and died in 14 A.D. How many years did he live?

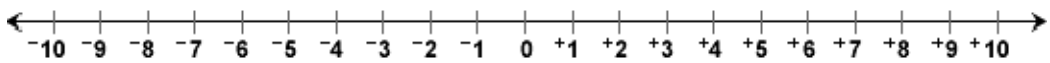
4. The air temperature in the atmosphere decreases at the rate of 9 ºC every 300 meters. What height would a plain have to fly to experience a temperature of −81 ºC? The temperature is 0º C at sea level.

5. Write an integer for each situation:

a) 10 degrees above zero _____
b) A loss of 16 dollars _____
c) A gain of 5 points _____
d) 8 steps backward _____

Remember:
The absolute value of a number is its distance to zero

6. Use the number line below to find those values of x satisfying **|x| = 5**.



OPERATIONS

1. Complete the magic square, using only the integers: −10, −8, −6, −4, 0, 2, 4, 6.

	-2	

2. Use each of the following numbers exactly once to fill the nine squares so that each equation is true: −1, −2, −3, −4, −5, −6, −7, −8, −9.

a) ☐ + 1 = 0

b) 4 - ☐ = 8

c) 6 − 8 = ☐

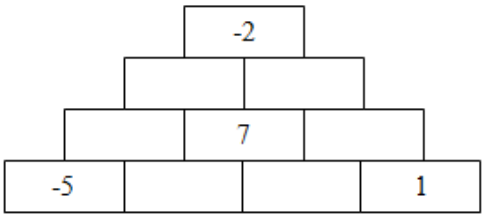
d) ☐ + ☐ = -10

e) ☐ · ☐ = 30

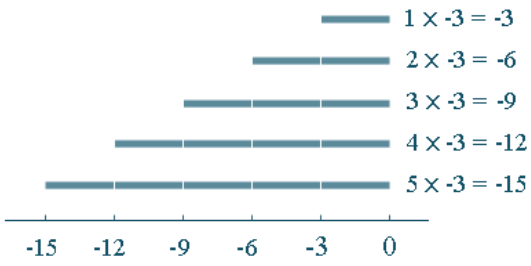
f) 16 : ☐ = -2

g) 101 − 110 = ☐

3. In the following pyramid, each number is the sum of the numbers it leans on. Complete it properly:



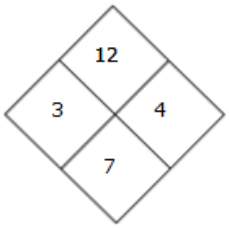
4. Here is an integer times an integer: **5·(−3)=−15**. Why is this so? We are simply taking "5 lots of −3", like this:



Similarly, show that **(−6) · 2=−12**

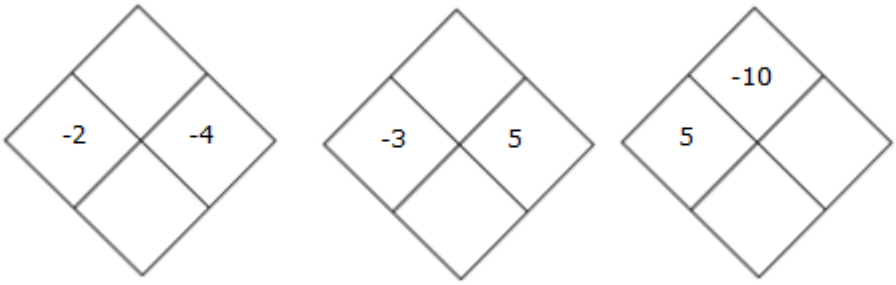
Source: **http://www.intmath.com/numbers/1-integers.php#game**

6. Do you see the relationship among these numbers?



(The top number is *product* of the two middle numbers, and the bottom number is the *sum* of the two middle numbers)

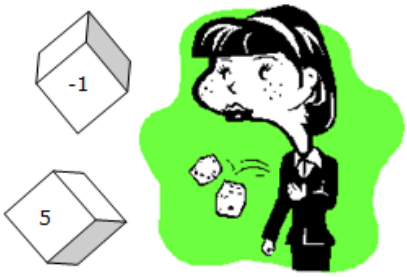
Can you fill the missing spaces in the following diamond problems?



Source: **http://www.nhadulted.org/thinkingmathematically/Issue5_01_06.pdf**

7. Race to 10:

-10
-9
-8
-7
-6
-5
-4
-3
-2
-1
0
1
2
3
4
5
6
7
8
9
10



MATERIALS

- The game board on the left (you can enlarge it if you want to)
- Two dice (one of them with positive integers on its sides, the other one with negatives)
- A marker (two colored paper clips can be fine)

INSTRUCTIONS:

Each student places a marker of some kind at zero. Students take turns rolling the two dice and adding the results. The answer tells them how many spaces to move up (positive result) or down (negative result).

For example, if Player A rolls a –3 and a 5, the sum is 2, so the player moves two spaces up. On her following turn, if player A rolls a 1 and a –6, the sum is –5, so the player moves down 5 spaces, ending up at –3.

Players take turns. The first player to get off the board either in the positive direction or the negative direction wins.

Source: **http://www.nhadulted.org/thinkingmathematically/Issue5_01_06.pdf**