Elevator Arithmetic

NAME _____

Part One – Interpreting the Elevator

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Elevator	$ \begin{array}{c} 6 \\ 5 \\ 4 \\ 3 \\ 2 \\ 1 \\ 0 \\ \downarrow \end{array} $	$ \begin{array}{c} 6 \\ 5 \\ 4 \\ 3 \\ 2 \\ 1 \\ 0 \\ \downarrow \end{array} $	3 2 1 0 -1 -2 -3 -3	3 2 1 0 -1 -2 -3	0 -1 -2 -3 -4 -5 -6		
VALUE						-3	5

Fill in the missing cells in the table to express picture as an integer or the integer as a picture.

Part Two - Traveling in the Elevator

Fill in the missing cells in the table to express the scenario as an expression, the movement(s) it describes and then the simplified value.

	(1)	(2)	(3)	(4)	(5)
Elevator	6 5 4 3 2 1 0	6 5 4 3 2 1 0	3 2 1 0 -1 -2 -3	3 2 1 1 -1 -2 -3	1 0 -1 -2 -3 -4 -5
MOVEMENT	Start at and go up				
EXPRESSION	2 + 3				
VALUE					



Part Three – Movement from the Expression

From the expression given, complete the table by sketching the elevator and the movement, describing the movement in words, and writing in the value.

	(1)	(2)	(3)	(4)	(5)
Elevator	5 4 3 2 1 0 -1 -2 -3 -4 -5	5 4 3 2 1 0 -1 -2 -3 -4 -5	5 4 3 2 1 0 -1 -2 -3 -4 -5	5 4 3 2 1 0 -1 -2 -3 -4 -5	5 4 3 2 1 0 -1 -2 -3 -4 -5
MOVEMENT	Start at and go up				
EXPRESSION	5-8	-4 + 3	-5 + 5	3 – 7	-3 + 7
VALUE					

Part Four – Using the Movement to determine Value

From the movement given, write the expression and the value. You are welcome to sketch the elevator movement or use manipulatives to determine the value.

	(1)	(2)	(3)	(4)	(5)
MOVEMENT	Start at 8 and go down 3	Start at 5 and go down 7	Start 3 floors underground and go up 9	Start floors underground and go down	
EXPRESSION				-2-5	-8+6
VALUE					

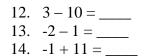
Part Five- Finding the Value from the Expression

Determine the value of the expression, by deciding what movement to use on the elevator, and then write your answer in the table. For the last set of examples, just write your answer next to the expression.

	(1)	(2)	(3)	(4)	(5)
EXPRESSION	9-5	3-7	-3+1	-2-5	-8+6
VALUE					

6. 10 – 4 = _____

- 7. -5 + 2 = _____
- 8. 3 9 = ____
- 9. -5 5 = ____ 10. -6 + 7 = ____ 11. -8 + 6 = ____





 $\textcircled{\mbox{\sc op}}$ 2007 National Council of Teachers of Mathematics http://illuminations.nctm.org