

Connecting Input-Output Machines and Puzzles

NCTM Standards 1, 2, 6, 9

First, complete the Cross Number Puzzle on the left. Then double each of the numbers to complete the puzzle on the right. Check to make sure the new puzzles work.

EXAMPLE

INPUT		
2	1	3
4	6	10
6	7	13

MACHINE OUTPUT		
4	2	6
8	12	20
12	14	26

This output puzzle works!

1

INPUT		
6	8	
9	7	

MACHINE OUTPUT		
12		

Does this output puzzle work?

2

INPUT		
10		
	9	19
	17	

MACHINE OUTPUT		

Does this output puzzle work?

- 3** Emma counted 14 goldfinches and 8 wrens at her birdfeeders on Saturday morning. In the afternoon she counted twice as many of each kind of bird. How many birds did Emma count in all on Saturday? Explain how you know.

Complete all puzzles by filling in the missing numbers. Remember that the machine doubles the numbers in the Input puzzles. Here you may have to look at the numbers in the Output puzzles to complete the Input puzzles.

4

INPUT

30		39
	5	
		74

MACHINE OUTPUT

	18	
60		70
		148

5

INPUT

140		
	120	
340		

MACHINE OUTPUT

	200	
400		640



6 Explain how you completed the top row of the input puzzle in Problem 5.

7 Challenge

INPUT

		13	
22			53
			42
47			

MACHINE OUTPUT

22			
	20	42	
		24	
	82		