

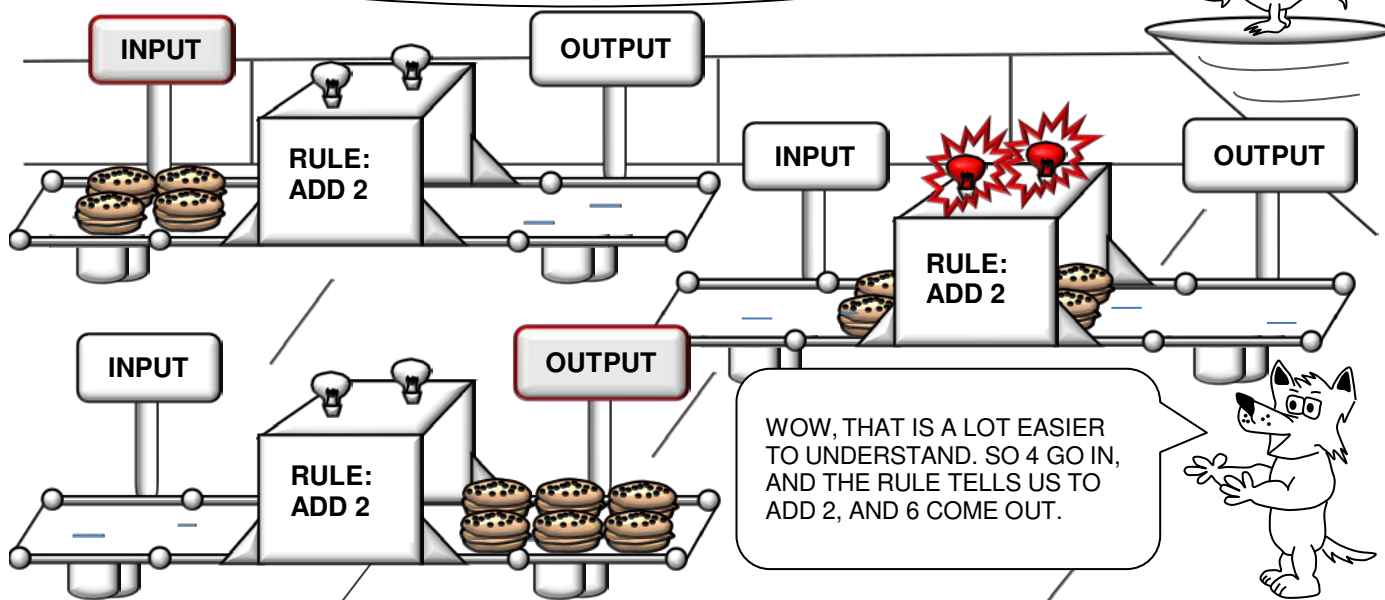
INPUT - OUTPUT TABLES HELP

ANSWERS



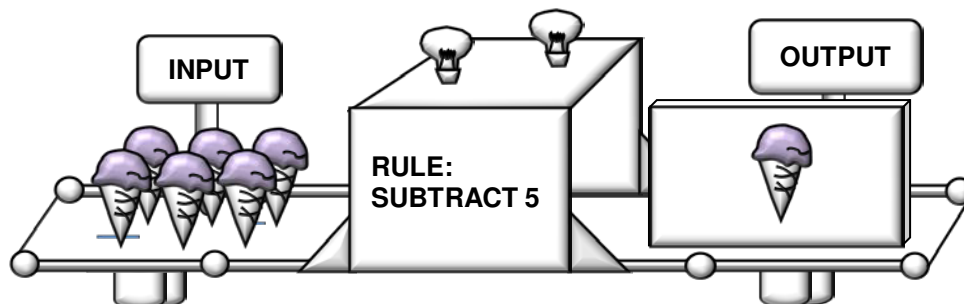
INPUT-OUTPUT TABLES HELP US DETERMINE A PATTERN WITH CERTAIN NUMBERS. THESE NUMBERS WILL FOLLOW A RULE AND THIS RULE TELLS US HOW ONE AMOUNT IS RELATED TO ANOTHER AMOUNT. IT'S LIKE A PUZZLE THAT CAN HELP US DETERMINE WHAT AN AMOUNT WAS IN THE PAST AND WHAT IT WILL BE IN THE FUTURE.

HERE IS AN EASIER WAY TO BETTER UNDERSTAND WHAT MAX IS TELLING YOU. BELOW IS AN INPUT-OUTPUT MACHINE. I SET THE MACHINE RULE TO ADD 2. SO IF I PUT IN FOUR HAMBURGERS, IT WILL ADD TWO, AND SIX WILL COME OUT.

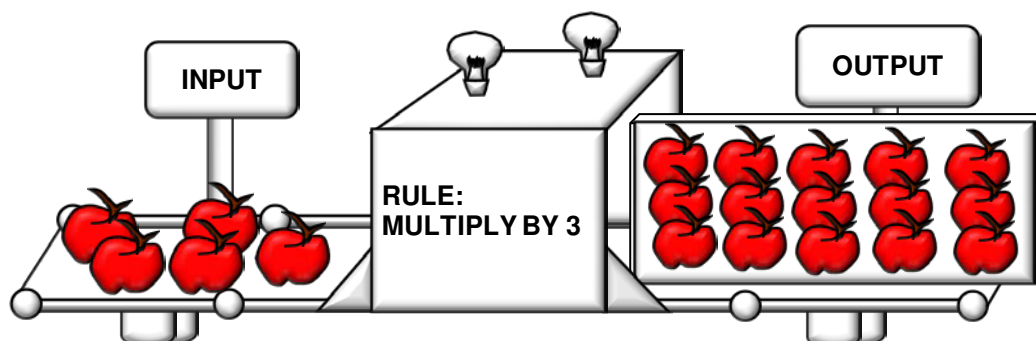


Now your turn. Draw the total number of items that will come out of each input-output machine.

1.



2.



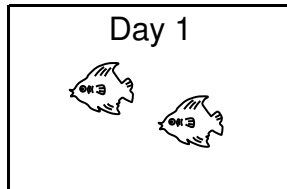
INPUT - OUTPUT TABLES PRACTICE

ANSWERS

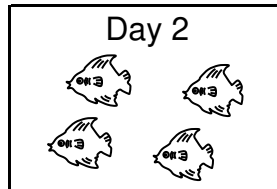


I HOPE YOU GET THE BASIC IDEA OF HOW AN INPUT-OUTPUT TABLE WORKS, BUT WE CANNOT KEEP DRAWING THE MACHINE. WE'LL NEED TO EVENTUALLY START USING AN ACTUAL TABLE TO SHOW THE RESULTS OF THE STATED RULE. BELOW ARE TWO MORE PRACTICE PROBLEMS FOR YOU TO WORK ON. THESE PROBLEMS ARE SLIGHTLY DIFFERENT BUT THE PROCESS IS EXACTLY THE SAME. REMEMBER, YOU SHOULD BE LOOKING FOR A PATTERN BETWEEN THE INPUT AND OUTPUT NUMBERS.

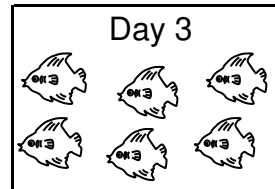
PROBLEM 1



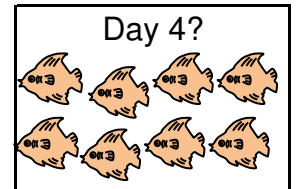
Day 1



Day 2



Day 3



Day 4?

Input	Output
Day 1	→ 2 Fish
Day 2	→ 4 Fish
Day 3	→ 6 Fish
Day 4	→ 8 Fish

I SEE THE PATTERN...DO YOU? WE MULTIPLY THE DAY BY 2 TO TELL US HOW MANY FISH THERE WILL BE. $2 \times 1 = 2$ FISH, $2 \times 2 = 4$ FISH, AND $2 \times 3 = 6$ FISH. SO HOW MANY FISH WILL THERE BE ON DAY 4?

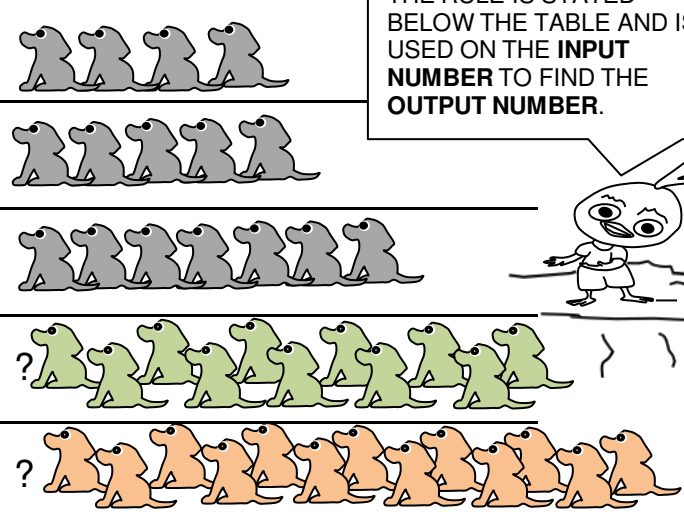
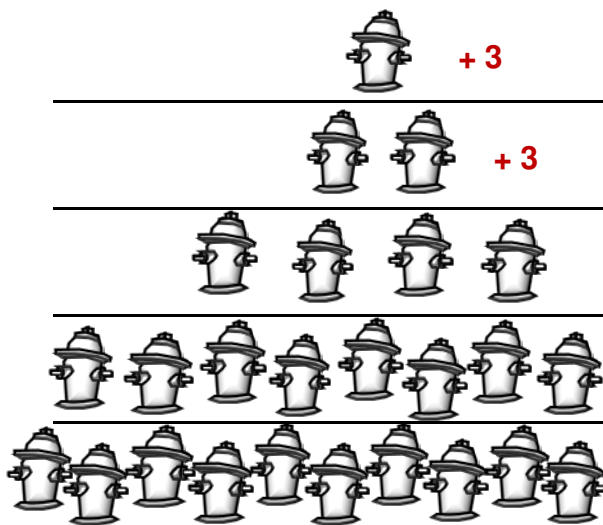
PROBLEM 2

Input

Output

Number of Fire Hydrants

Number of Dogs



THE RULE IS STATED BELOW THE TABLE AND IS USED ON THE **INPUT** NUMBER TO FIND THE **OUTPUT** NUMBER.

Rule: Add 3



SINCE YOU KNOW THE RULE YOU CAN FIGURE OUT THE NUMBER OF DOGS IF YOU KNOW THE NUMBER OF FIRE HYDRANTS. SO HOW MANY DOGS WILL THERE BE IF THERE ARE 30 FIRE HYDRANTS? ACTUALLY, YOU CAN ALSO FIGURE OUT HOW MANY FIRE HYDRANTS THERE ARE IF YOU KNOW THE NUMBER OF DOGS. CAN YOU FIGURE OUT HOW MANY FIRE HYDRANTS THERE ARE IF THERE ARE 47 DOGS?

30 Fire Hydrants → **33** Dogs

44 Fire Hydrants ← 47 Dogs

INPUT - OUTPUT TABLES PRACTICE

ANSWERS

Complete each input-output table.

Input Number of Butterflies	Output Number of Flowers
	
	
	
	

Rule: ?



NOW WE NEED TO STOP USING PICTURES AND START USING NUMBERS. BELOW ARE THREE INPUT-OUTPUT TABLES THAT ONLY USE NUMBERS. THE FIRST INCLUDES THE RULE, BUT THE OTHER TWO DO NOT. COMPLETE THE TABLES AND WRITE THE RULES.

1.

Input	Output
4	6
7	9
11	13
16	18
22	24

Rule: Add 2

2.

Input	Output
12	4
16	8
28	20
34	26
39	31

Rule: Subtract 8

3.

Input	Output
2	10
4	20
5	25
8	40
10	50

Rule: Multiply by 5

4. Patrick is exactly six years older than Steven. At the moment, Steven is 9. Below is an input-output table showing their ages in the future. Complete the table by filling in the empty spaces.

Age in years								
Input	Steven's age	9	12	18	21	24	40	57
Output	Patrick's age	15	18	24	27	30	46	63



WITH THIS TABLE AND KNOWING THE RULE YOU CAN NOW FIGURE OUT THEIR DIFFERENT AGES IN THE FUTURE AND PAST. LIKE, WHEN PATRICK IS 97, HOW OLD WILL STEVEN BE?

91
Steven's age