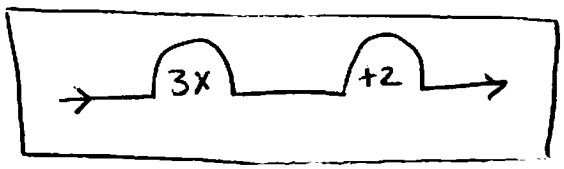
GRADE 5 UNIT 1 LESSON 3 P 14 # 1-3. (PRACTICE)

1. a)

# of Pent.	Perimeter (units)	
1	5	+3
2	8	+3
3	11	+3
4	14	

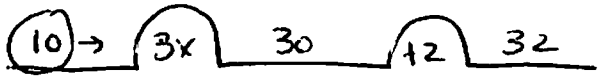
b) Start at 5 then add 3 each time

OR



SEE BELOW

c)



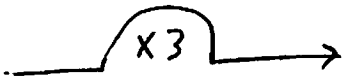
32 units perimeter

62 unit perimeter

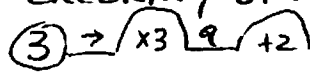
How did I figure out the NUMBER MACHINE?

① the Pattern Rule for the OUTPUT (PERIMETER) is add 3 each time. That's the same as SKIP counting by 3 (like on your fingers) which is the same as multiplying by 3!

So, I know the first part of the number machine



② I know the number machine is not complete because 1x3 does not equal (output to) 5. I still have to add 2.

③ I confirm by checking other input values eg. 

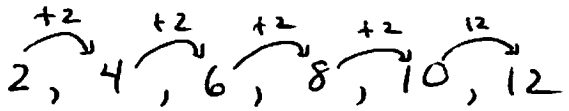
✓

2.

b)

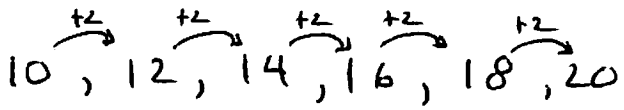
FIGURE	# GREEN TILES	# YELLOW TILES
1	2	10
2	4	12
3	6	14
4	8	16
5	10	18
6	12	20

c) Pattern Rule GREEN TILES



Start at 2 then add 2 each time.

Pattern Rule Yellow TILES



Start at 10 then add 2 each time

The number machines will help us PREDICT!

GREEN

EASY ONE!

YELLOW

2×1 does not equal 10! We need to add 8

CHECK with, say, 4th figure $4 \times 2 = \underline{8} \rightarrow +8 = 16$ ✓

2. d) # $15 \rightarrow$ [X2] ____ 30 GREEN TILES in 15th figure

e) $20 \rightarrow$ [X2] [40] [+8] ____ 48 Yellow tiles in the 20th figure

f) The number of green tiles must be a ~~ba~~ multiple of 2 therefore you cannot have 31 green tiles.

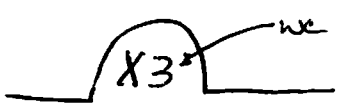
The number of yellow tiles less 8 must be a multiple of 2 therefore (41-8 = 33) you cannot have 41 yellow tiles.

3. b

Object	Number of Cubes
1	1
2	4
3	7
4	10
5	13
6	16

c) Pattern Rule for number of cubes is:
Start at 1 then add 3.

To PREDICT we need to know the Number Machine



we know the first operator is 3x because we add 3 each time

BUT!

1X3 does not equal 1! We need to subtract 2

$1 \rightarrow$ [X3] [3] [-2] ____ 1

CHECK $4 \rightarrow$ [X3] [12] [-2] ____ 10 ✓

3. d) 10 (X3) 30 (−2) 28 cubes in 10th object

e) The number of cubes plus 2 must be a multiple of 3.

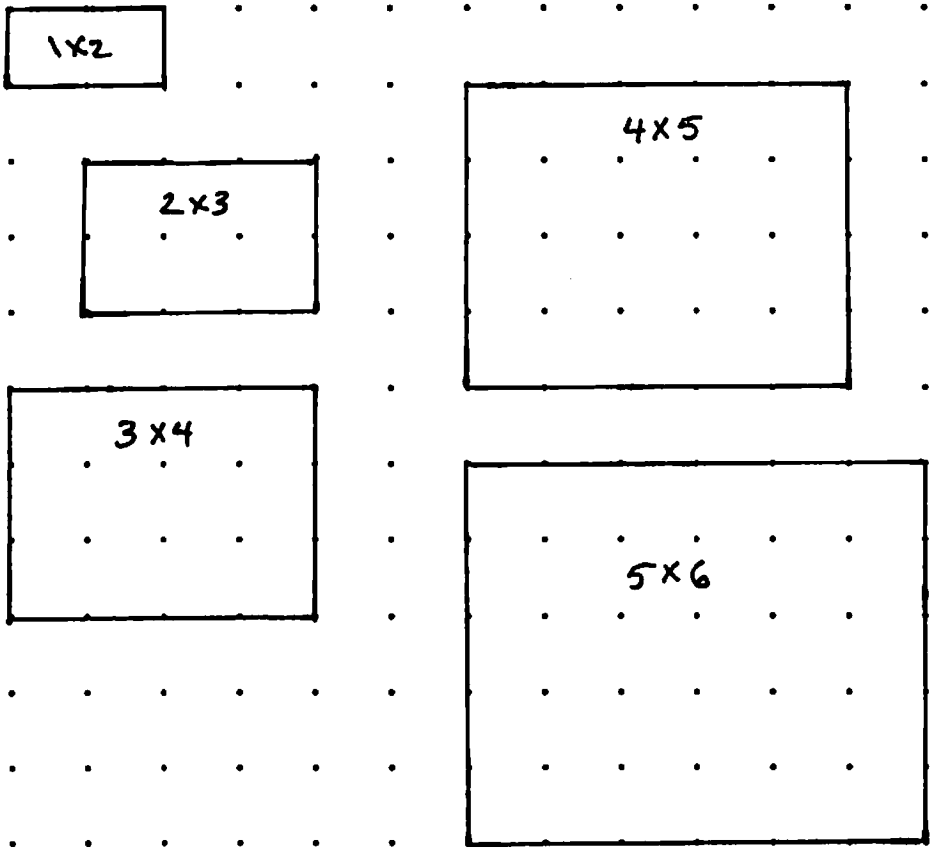
therefore (50+2 = 52) an object ~~cannot~~ cannot have 52 cubes

nor 51 cubes (51+2 = 53)

4. Skip #4.

From Explore P. 12

Square Dot Paper (1 cm)



Rectangle	Length	Width	Number of Reqs on Perimeter
1	2	1	6
2	3	2	10
3	4	3	14
4	5	4	18
5	6	5	22

Rule is (x4) then (+2)

∴ 10th rectangle will have

$(10 \times 4) + 2 = 42$