Name: Solutions Date: _____ Period: ____

Choosing the Rule

The side lengths and perimeters of some regular polygons are shown in the table below. Which expression can be used to find the perimeter of a similar polygon with a side length of n units?

A. $n+8$ X

B. $3n$

C. $\frac{n}{3}$

D. $n+3$

Side Length (n)	Perimeter (y)
4	12
5	15
7	21
9	27
n	

- graph each answer choice
- use x instead of n

The table below shows about how many people live in an area of square miles.

Square Miles (n)	Number of People (y)
12	960
20	1600
35	2800
40	3200
n	

Which expression can be used to find the number of people that would occupy an area of n square miles?

A. $8n$

B. $n+80$

C. $80n$

D. $n+948$

Which equation can be used to the find the number of ounces, y, in x cups?

Cups (x)	1	2	3	4
Ounces (y)	8	16	24	32

A. $y = 8x$

B. $y = x + 8$

C. $y = \frac{8}{x}$

D. $x = 8y$

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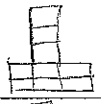
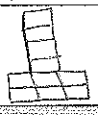
Building the Table

What is the arithmetic sequence represented by the table?

7, 8, 9, 10, 11, 12

Term Number (# of blocks in chimney)	Visual Form	Written Description	Process Column	Value of Term (total blocks to build house)
1		A house with a one block high chimney takes seven blocks to build.		7
2		A house with a two block high chimney takes eight blocks to build.	We calculate to graph answer choices	8
3		3 block high chimney takes 9 blocks to build		9
4		4 block high chimney → 10 blocks to build		10
100		100 blocks for chimney	6 blocks on base	106
x				

Which expression can be used to find the value of any term in the table above?

A. 3n + 4
C. 6n + 1
(B) n + 6
D. 2n + 4

How many blocks would be needed if there were 11 blocks in the chimney? 17

11 + 6

If 26 blocks were used, how many blocks are in the chimney?

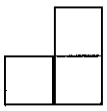
B. 16
C. 10
(C.) 20
D. 9

$26 = n + 6$

$-6 \quad -6$

$20 = n$

If the rule for the pattern is 2(x) +1, how many blocks will be in the figure on the 25th day?



Day 1

Day 2

Day 3

$2(25) + 1$

$50 + 1$

51

A. 26
C. 50
B. 49
(D.) 51

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Write a process table for the following expressions.

$T = 2.5c + 1.5$ $y = 2.5x + 1.5$

C		T
0	use calculator graph and ctrl T	1.5
1		4
3		9
5		14

can use any #'s here

$y = -0.75x + 2$

X	Process	y
0	graph on calc. use ctrl T	2
1		1.25
2		0.5
3		-.25

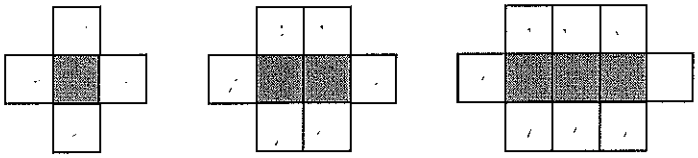
$y = \frac{1}{2}x - 3$

X	Process	y
-2		-4
0		-3
2		-2
4		-1

$T = -4.2x - 2$

X	Process	T
-1		2.2
0		-2
1		-6.2
2		-10.4

Which expression can be used to find the n^{th} term in this sequence? Build a process table.



What is the sequence represented by this situation? 5, 8, 11, (14)

3 3 3

The sequence is going up / down by 3. That is the number if front of the n.

Eliminate B + C. Then graph A + D. Click ctrl T for the table.

A. $3n+2$

B. ~~$2n$~~ $+3$

C. ~~n^2~~ $+4$

D. $3(n+2)$

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Which equation best represents the relationship between x and y in the table below?

x	y
8	1
12	3
18	6
20	7

A. $y = \frac{1}{2}x - 3$

B. $x = 2y - 6$

C. $y = \frac{1}{2}x - 2$

D. $x = 2y - 3$

graph each answer choice. click ctrl + for the table.

Which equation best represents the relationship between x and y in the table below?

x	y
6	1
10	3
16	6
18	7

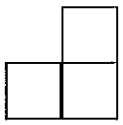
A. $y = \frac{1}{2}x - 3$

B. $x = 2y - 6$

C. $y = \frac{1}{2}x - 2$

D. $x = 2y - 3$

If the pattern continues, how many blocks will be in the figure on day 25? Hint: Build a table.

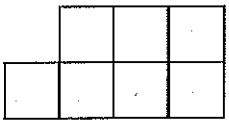


Day 1

3

Day 2

5



Day 3

7

A. 26

B. 49

C. 50

D. 51

x	y
1	3
2	5
3	7

+2, +2

$2x + 1$

$2(25) + 1$

51