Warm Up

1. Does the table represent a linear relation?
If so then write the equation that relates x to y.

a)

x	y
1	21
2	17
3	13
4	9

(+1, −4; +1, −4; +1, −4)

$y = -4x + 25$

$-4(2) + 25 = -8 + 25 = 17$ ✓

b)

x	y
2	6
3	9
4	12
5	15

(+1, +3; +1, +3; +1, +3)

$y = 3x$

$3(3) = 9$

c)

x	y
1	5
2	7
3	9
4	11
5	13

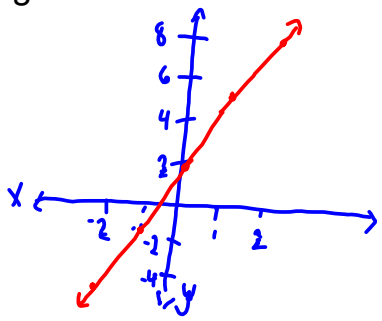
(+1, +2; +2, +4; +1, +2)

$y = 2x + 3$

$2(2) + 3 = 4 + 3 = 7$ ✓

2. Make a table of values and graph the equation $y = 3x + 2$ using the x-values -2 to 2.

x	y
-2	-4
-1	-1
0	2
1	5
2	8



29. Here is a pattern made with toothpicks.
The pattern continues.

a) Write an equation that relates the number of toothpicks, N, to the figure number, n.
b) How many toothpicks are needed for figure 80?

a)

n	N
1	4
2	6
3	8

(+2, +2)

$N = 2n + 2$

check $2(2) + 2 = 4 + 2 = 6$ ✓

$2(3) + 2 = 6 + 2 = 8$ ✓

b) $N = 2n + 2$

$= 2(80) + 2$

$= 160 + 2$

$= 162$