I have already submitted five pages of work on this problem (PDF on 15th October, 2015), but I wanted to come back to this one, as I hadn't found a repeating floor pattern during my investigation and wanted to know why.

I realised that I hadn't used zero, so used 0, 5 and 10, alternating values and applying negatives, to see how this would affect the patterns.

(1) $a=0$, $b=5$
repeating floor numbers

5	0	10	0	20	0
0 | 5	5 | 5	0 | 10	10 | 10	0 | 20	20 | 20
5	10	10	20	20	40

(2) $a = 5$, $b = 0$
alternating negative roof numbers

-5	10	-10	20	-20	40
5 | 0	-5 | 5	10 | 0	-10 | 10	20 | 0	-20 | 20
5	0	10	0	20	0

(3) $a=0$, $b= -5$
repeating negative floor numbers

-5	0	-10	0	-20	0
0 | -5	-5 | -5	0 | -10	-10 | -10	0 | -20	-20 | -20
-5	-10	-10	-20	-20	-40

(4) $a = -5$, $b = 0$
repeating roof numbers

5	10	10	20	20	40
-5 | 0	-5 | 5	-10 | 0	-10 | 10	-20 | 0	-20 | 20
-5	0	-10	0	-20	0

(5) $a = -10$, $b = -5$
see below

5	-20	10	-40	20	-80
-10 | -5	5 | -15	-20 | -10	10 | -30	-40 | -20	20 | -60
-15	-10	-30	-20	-60	-40

(6) $a = -5$, $b = -10$
repeating roof numbers

-5	-10	-10	-20	-20	-40
-5 | -10	-5 | -15	-10 | -20	-10 | -30	-20 | -40	-20 | -60
-15	-20	-30	-40	-60	-80

(7) $a = -5$, $b = -5$
repeating floor numbers

0	-10	0	-20	0	-40
-5 | -5	0 | -10	-10 | -10	0 | -20	-20 | -20	0 | -40
-10	-10	-20	-20	-40	-40

Swapping the values makes the roof numbers of (1) become the floor numbers of (2), the roof numbers of (3) become the floor numbers of (4), but not for (5) and (6).

This is because I used zero for the first four sets: $(5 - 0 = 5 + 0)$, and $(-5 - 0 = -5 + 0)$, but not for the last, where directed number has an effect: $(-5 - -10 \neq -5 + -10)$

Pattern (5) is interesting, because pairs of consecutive roof numbers are multiplied by negative 4: $(T_1 = 5, T_2 = -20)$, $(T_3 = 10, T_4 = -40)$, etc.. But this is just down to the numbers used.

If someone does read this, can you please tie it up with PART ONE, because that took me weeks to do (on and off after school), this is just a bit extra to cover something that I'd missed. Thanks!!!