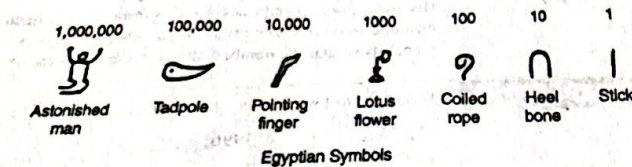


Key

Quiz 2

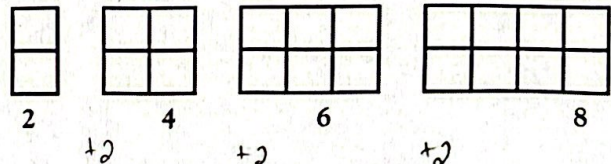
This is a two-stage quiz. During the first stage, use your knowledge & calculator to take this quiz. You have 15 min. In the second stage, you are now welcome to use your books, notes, and students in the class to retake the same quiz. You have 15 min. to write one solution (with everyone's name on it!!!) to be turned in for the group.

Show your work as you would for a colleague.



1. The first four figures in a pattern as well as the number of small squares are shown.

- (a) [2] Do these form an arithmetic or geometric sequence? Briefly justify your answer.



There is a constant difference of 2 so Arithmetic

- (b) [2] Find the number of small squares in the 45th figure. Provide some reasoning.

Figure #	1	2	3	4	n
# of small squares	2	4	6	8	2n

so the # of small squares is $2 \cdot 45$ or 90

2. [3] Write 143 in a different number system (Babylonian, Egyptian, base two, base five, etc). Clearly indicate what system your final answer is in!

Egyptian

Babylonian

Base five

143 = 120 + 22

143 = 120 + 22

143 = 125 + 17

= $5^3 + 15 + 2$

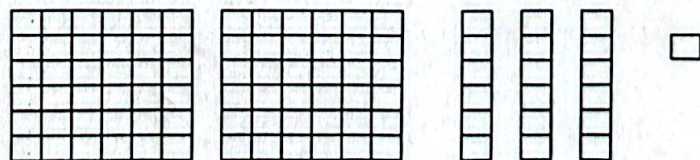
= $1 \cdot 5^3 + 3 \cdot 5 + 2$

So 1032 five

3. A number is drawn out below in expanded form with two flats, three longs, & one unit.

- (a) [1] What base is the number written in?

Six



- (b) [2] Write out the number in positional notation for the given base given.

2 flats + 3 longs + 1 unit or 231 six