Two Puzzles

(1) In π N 10, p. 22 (July 1980), I proposed, as a puzzle, to find (?) in the following sequence:

..., 7, 9, 12, (?), 24, 36, 56, 90, ...

The point about the answer

$$(?) = 24 \log 2 = 16.6355323\ldots$$

is that it is transcendental, being given (by use of l'Hospital's rule) by $n = 0$ in

$$\frac{24}{n}(2^n - 1)$$

all other terms in the sequence being rational numbers.

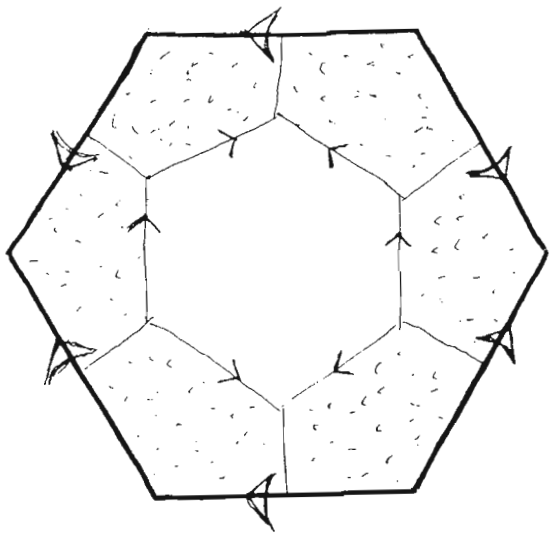
Now try

..., 28, 0, 21, 4, 18, 0, (?), 24, 18, 20, 21, 24, 28, ...

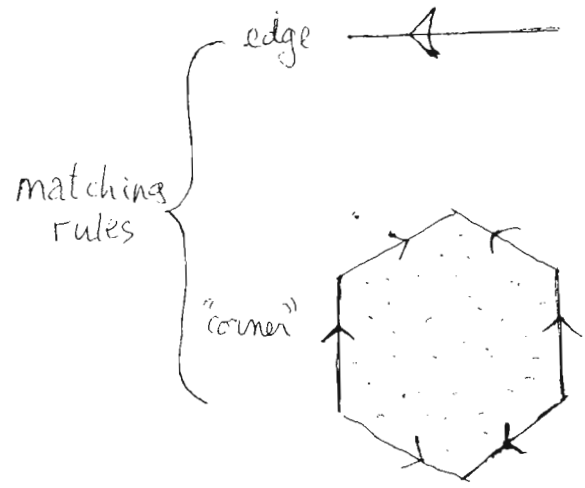
which has a little extra twist about it.

[Hint: first add a certain integer to each term, to make it somewhat more symmetrical]

(2) This problem is to tile the plane with a regular hexagon, with edge-matching rules and "corner matching rules":



tile



To start: