Two Puzzles

1. In T N 10, p. 22 (July 1980), I proposed, as a puzzle, to find the number in the following sequence:
   
   \[ \ldots, 7, 9, 12, \overline{?}, 24, 36, 56, 90, \ldots \]

   The point about the answer

   \[ ? = 24 \log 2 = 16.6355323 \ldots \]

   is that it is transcendental, being given (by use of l'Hopital's rule) by

   \[ \frac{24}{n} \left(2^n - 1\right) \]

   all other terms in the sequence being rational numbers.

   Now try

   \[ \ldots, 28, 0, 21, 4, 18, 0, \overline{?}, 24, 18, 20, 21, 24, 28, \ldots \]

   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";

To start: