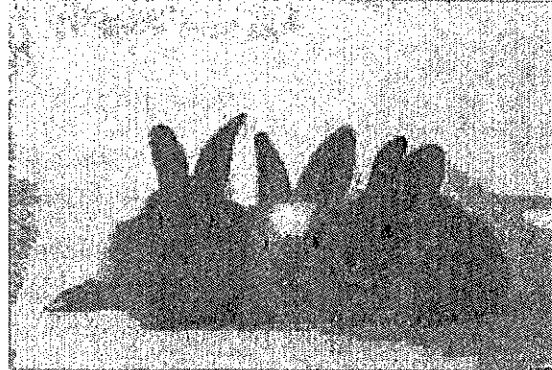


Bunnies!

Bunnies are pretty cute. Here's a few pictures before we do any math. Enjoy!



Bunnies are famous for reproducing really fast. The number of bunnies can be modeled as a function of time. In fact, although bunnies are really cute, their high growth rate poses an ecological challenge for habitats that lack natural bunny predators.

Here's an article with more information on bunny ecology:

<http://www.abc.net.au/science/articles/2009/04/08/2538860.htm>

For each of the following situations, find the number of bunnies after 1, 2, 3, 4, 5, and 10 generations.

1. Start with 1 pair of bunnies (2 total bunnies). Each generation, every pair of bunnies gives birth to another pair.

x	0	1	2	3	4	5
y	2	4	8	16	32	64

2. Start with 10 pairs of bunnies. Each generation, every pair of bunnies gives birth to another pair.

x	0	1	2	3	4	5
y	20	40	80	160	320	640

3. Start with 1 pair of bunnies. Each generation, every pair of bunnies gives birth to 2 more pairs (4 baby bunnies).

x	0	1	2	3	4	5
y	2	6	18	54	162	486

4. Start with 1 pair of bunnies. Each generation, every pair of bunnies gives birth to 3 more pairs (6 baby bunnies).

x	0	1	2	3	4	5
y	2	8	32	128	512	2048

