

# LEWIS CARROLL'S GAMES & PUZZLES

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## *Cakes in a Row*

"A barrowful of *what?*" thought Alice. But she had not long to doubt, for the next moment a shower of little pebbles came rattling in at the window, and some of them hit her in the face. "I'll put a stop to this," she said to herself, and shouted out "You'd better not do that again!" which produced another dead silence.

Alice noticed, with some surprise, that the pebbles were all turning into little cakes as they lay on the floor, and a bright idea came into her head.



Here are two rows of five little cakes (or pebbles), equally spaced in each row. Rearrange the cakes to make five rows with four cakes in each row. You may only move *four* of the cakes from their present position.

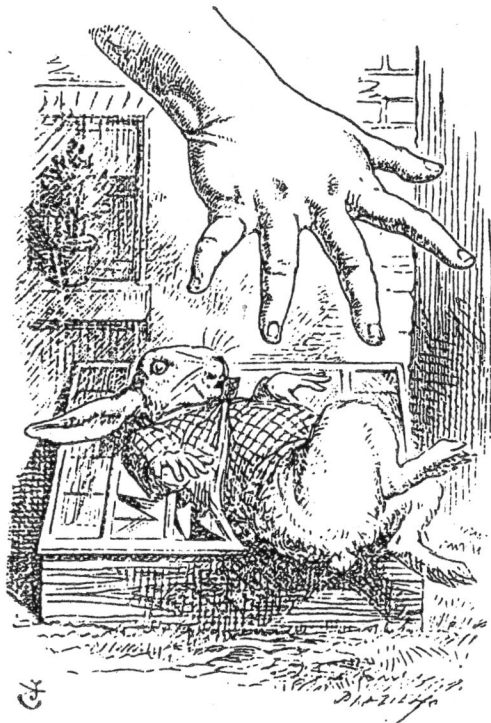
*Hints:*

1. He was thoughtful and grave—but the orders he gave  
Were enough to bewilder a crew.  
When he cried, "Steer to starboard, but keep her head  
larboard!"  
What on earth was the helmsman to do?

*The Hunting of the Snark.*

2. Each cake may appear in more than one row.

There is more than one solution to this problem. See if you can find other solutions.



## *More Cakes in a Row*

"If I eat one of these cakes," she thought, "it's sure to make *some* change in my size; and, as it ca'n't possibly make me larger, it must make me smaller, I suppose."

Before Alice swallowed one of the cakes, she tried some other problems about arranging the cakes in rows.

1. Her first problem was to put nine cakes into eight rows with three cakes in each row.
2. Then she tried to put nine cakes into nine rows with three cakes in each row.
3. Finally, with a little thought she managed to put nine cakes into ten rows with three cakes in each row.

See if you can solve these three arrangement problems that Alice succeeded in tackling.

*Hint:*

You boil it in sawdust: you salt it in glue:  
You condense it with locusts and tape:  
Still keeping one principal object in view—  
To preserve its symmetrical shape.

*The Hunting of the Snark.*

Make up some of your own arrangement problems like these using counters or bottle tops.