

# Rhind Papyrus Problems (1650BC)

Although there is some strictly practical mathematics on the papyrus, including calculations needed for surveying, building, and accounting, some of which involve Egyptian fractions, many of the problems in the Rhind Papyrus take the form of arithmetic puzzles.

One of these is: Each of seven houses contain seven cats. Each cat kills seven mice. Each mouse had eaten seven ears of grain. Each ear of grain would have produced seven hekats of wheat. What is the total of all of these (houses, cats, mice, grain, and hekats)?

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$$\begin{array}{ccccccc} & & & 7 * 7 * 7 * 7 & & & \\ & & 7 * 7 * 7 & & & & \\ & 7 * 7 & & & & 7 * 7 * 7 * 7 * 7 & \\ 7 * 1 & & & & & & \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & & \\ 1 & + & 49 & + & 343 & + & 2,401 & + & 16,807 & = & 19,607 \end{array}$$

houses, cats, mice, grain, and hekats

$$\begin{array}{r}
 \textcircled{6} \\
 49 \\
 * 7 \\
 \hline
 343 \\
 \hline
 \hline
 \end{array}$$

$$\begin{array}{r}
 \textcircled{3} \textcircled{2} \\
 343 \\
 * 7 \\
 \hline
 2401 \\
 \hline
 \hline
 \end{array}$$

$$\begin{array}{r}
 \textcircled{2} \\
 2,401 \\
 * 7 \\
 \hline
 16,807 \\
 \hline
 \hline
 \end{array}$$

$$\begin{array}{r}
 \textcircled{1} \textcircled{1} \textcircled{2} \\
 16807 \\
 2401 \\
 343 \\
 49 \\
 + 7 \\
 \hline
 19,607
 \end{array}$$

## **Are you smarter than a fifth grader (2008AD)**

There are 7 girls in a bus

Each girl has 7 backpacks

In each backpack, there are 7 big cats

For every big cat there are 7 little cats

**Question: How many legs are there in the bus (do not count the bus driver)?**

## Are you smarter than a fifth grader (2008AD)

There are 7 girls in a bus

Each girl has 7 backpacks

In each backpack, there are 7 big cats

For every big cat there are 7 little cats

Question: How many legs are there in the bus?

#	legs	total legs
7	2	14
49	0	0
343	4	1,372
2,401	4	9,604
		<u>10,990</u>