
The Number Machine

Northwest Iowa Math Teachers' Circle
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Based on paper by Joshua Zucker and Tom Davis

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Let's explore the number machine. Can you figure out what the machine does?

Suppose you input x and y into the machine, what will the output be?

Suppose the number machine works like a punch card machine. You input two punch cards and it spits out a new one. You are given a stack of cards numbered 1-100. What are all the questions you could think to ask?

**How many times will
you be able to run
the machine?**

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**If so, what is the
greatest/least final
number you could
end with?**

