

MathFLIX CHALLENGE

The Number Devil: Night 1

During Night 1, the Number Devil offers to show how to make all numbers out of 1.

					1
				x	1
					<u>1</u>

					1	1	
				x	1	1	
					<u>1</u>	<u>1</u>	
					1	1	
					1	1	
					<u>1</u>	<u>2</u>	<u>1</u>

					1	1	1		
				x	1	1	1		
					<u>1</u>	<u>1</u>	<u>1</u>		
					1	1	1		
					1	1	1		
					1	1	1		
					<u>1</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>1</u>

If you continue this pattern, will you make all the numbers from 0-9? Is the Number Devil correct?

					1	1	1	1
				x	1	1	1	1
					<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>

						1	1	1	1	1
					x	1	1	1	1	1
						<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>

						1	1	1	1	1	1
					x	1	1	1	1	1	1
						<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>

							1	1	1	1	1	1
						x	1	1	1	1	1	1
							<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>

The Number Devil thinks this pattern will continue forever. He is wrong. Do you know why?