

A: Animal Appendages

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Problem

Given how many distinguishable gestures each finger can do, up to what number can you count from zero.

Solution

- We are given “active” gestures per finger, so we need to add 1 to each finger for total gestures.
- With only two fingers with x and y total gestures, there are $x \cdot y$ gestures together.
- Extending that to ten finger: $\prod_{i=1}^{10} (a_i + 1)$.
- Subtract one since we include zero.