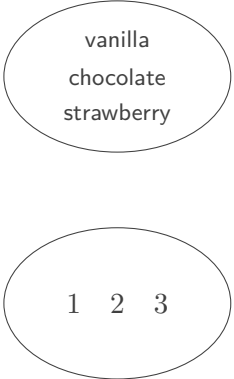


# The Counting Numbers

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vanilla  
chocolate  
strawberry

1 2 3

$$\mathbb{N} = \{1, 2, 3, \dots\}$$

$$1 \leftrightarrow \text{vanilla}$$

$$2 \leftrightarrow \text{chocolate}$$

$$3 \leftrightarrow \text{strawberry}$$

$2\mathbb{N}$

$$\mathbb{N} = \{1, 2, 3, \dots\}$$

$$2\mathbb{N} = \{2, 4, 6, \dots\}$$

$$\mathbb{N} \leftrightarrow 2\mathbb{N}$$

$$1 \leftrightarrow 2$$

$$2 \leftrightarrow 4$$

$$3 \leftrightarrow 6$$

$\dots$

*Computer programs are binary strings.*

*Treat them as integers.*

*They're countable.*

*(Slight issue with leading zeros.)*