Section 1

Set inclusion is reflexive

Any element in A is also in A, since sets are defined by their elements. Thus, $A \subset A$.

Set inclusion is transitive $A \subset B$ *and* $B \subset C$. Any element in A is in B, and any such element is also in C. Thus, any element in A is in C, and $A \subset C$.

Section 2

Experimenting with rules of sentence generation

Section 3
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Section 10

Functions composition is not commutative

$f : 2 \rightarrow 2$, set $f(0) = 0, f(1) = 0$.
$g : 2 \rightarrow 2$, set $g(0) = 1, f(1) = 1$.
$f \circ g$ is $2 \rightarrow 2$ s.t. $f \circ g(0) = 1, f \circ g(1) = 1$, but
$g \circ f$ is $2 \rightarrow 2$ s.t. $g \circ f(0) = 0, g \circ f(1) = 0$.