

## Supplementary : Advanced

### Solution 51

(a)

$$\left| \begin{array}{l} \text{playlistCount} : \text{SongId} \rightarrow N \\ \hline \forall i : \text{songs} \bullet \text{playlistCount}(i) = \#\{p : \text{dom playlist} \mid i \in \text{ran playlist}(p)\} \end{array} \right.$$

(Parts b-c use complex conditional logic - testing basic parts only)

### Solution 52

These solutions use pattern matching with conditionals like:

$$\text{premiumPlays}(\langle \rangle) = \langle \rangle$$

forall x : Play; s : seq(Play) —

$$\text{premiumPlays}(\langle x \rangle^s) = \langle x \rangle^{\text{premiumPlays}(s) \text{ if } \text{userStatus}(x.2) = \text{premium}}$$

$$\text{premiumPlays}(s) \text{ if } \text{userStatus}(x.2) = \text{standard}$$

(Blocked by: pattern matching in axiomatic definitions - Phase 18)