Construct a **Turing machine** that **accepts** the language:

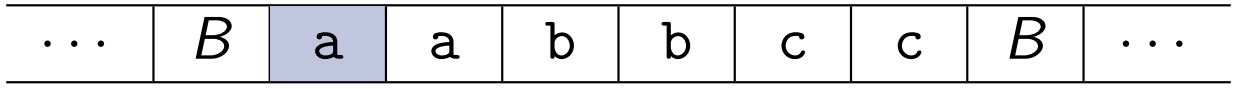
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$

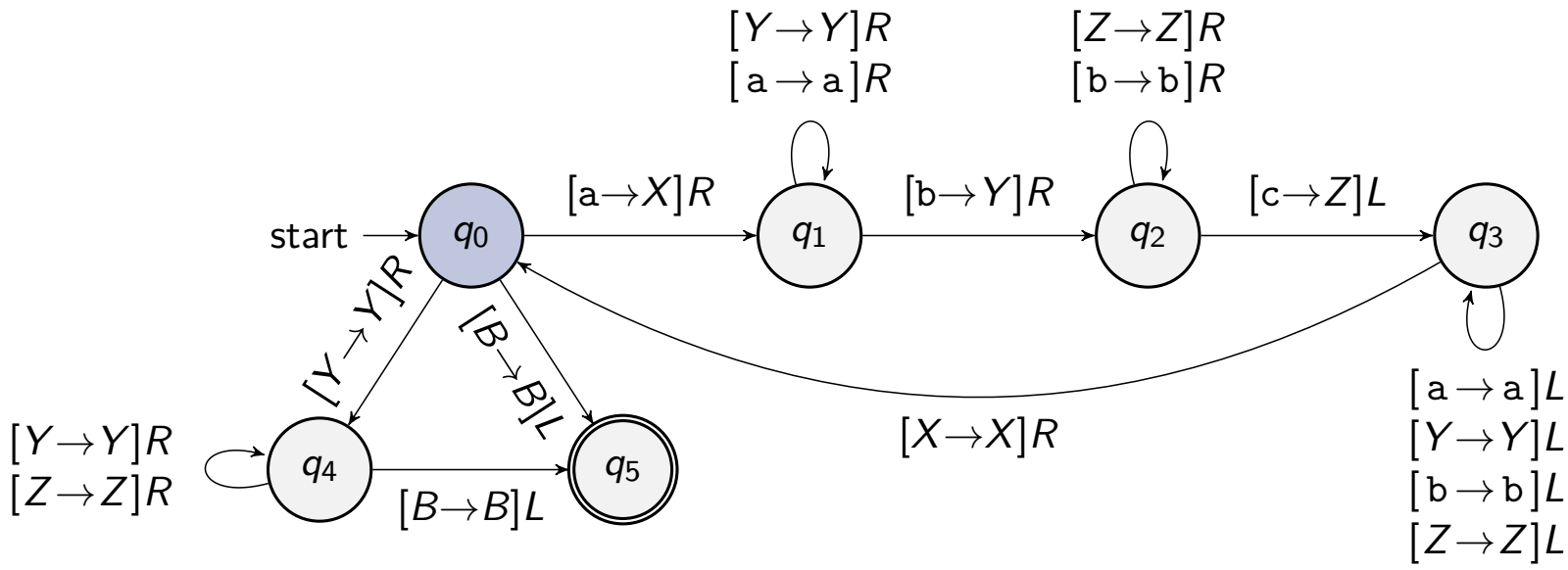
$\cdots$	B	a	a	b	b	c	c	B	$\cdots$

1: **while** there are a's **do**
2: Find and Replace a with X
3: Find and Replace b with Y
4: Find and Replace c with Z
5: Check if only Y's and Z's are left

Construct a **Turing machine** that **accepts** the language:

$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$

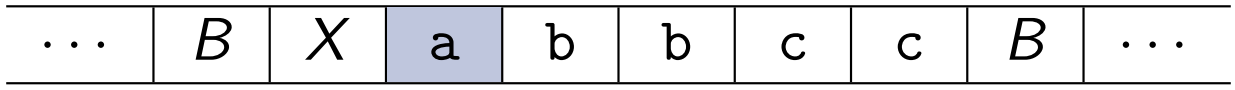


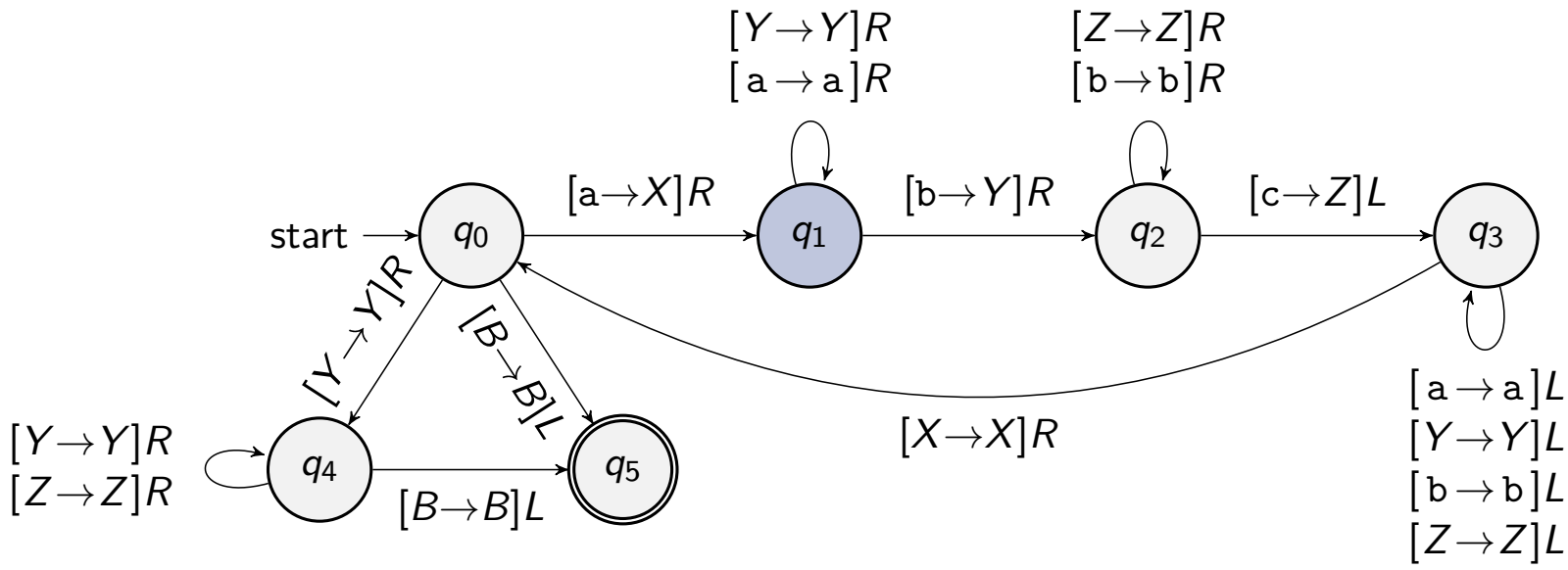


Find and Replace a with X.

Construct a **Turing machine** that **accepts** the language:

$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$

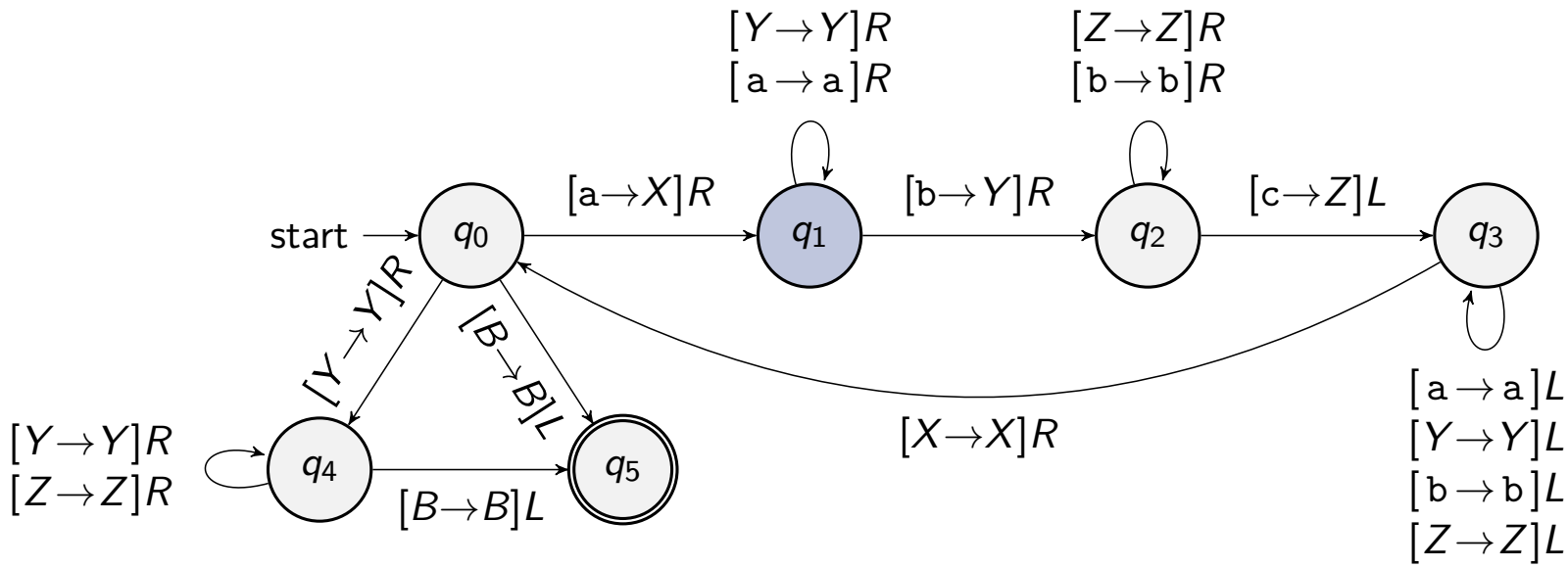




Find and Replace b with Y.

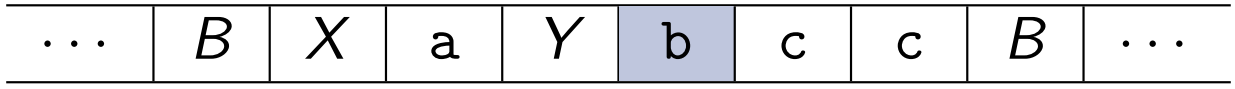
Construct a **Turing machine** that **accepts** the language:

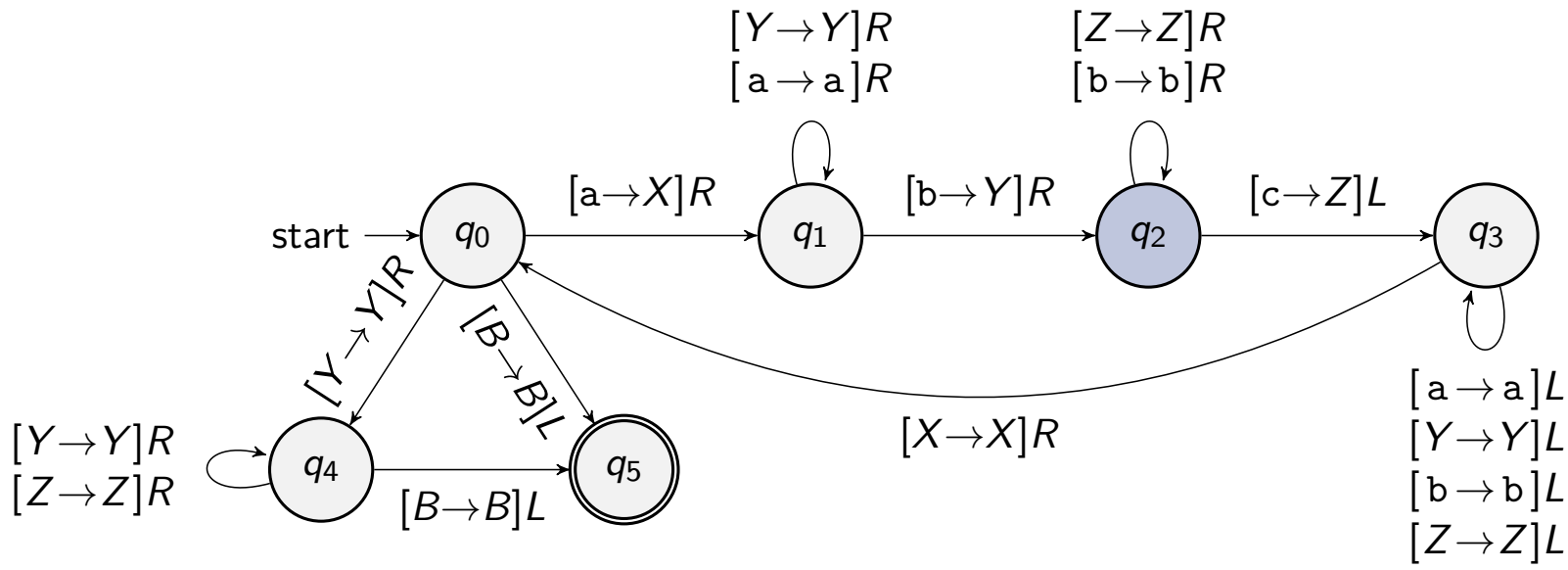
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$



Construct a **Turing machine** that **accepts** the language:

$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$

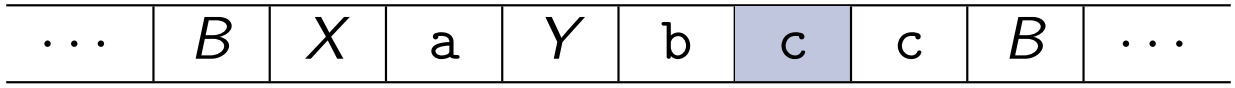


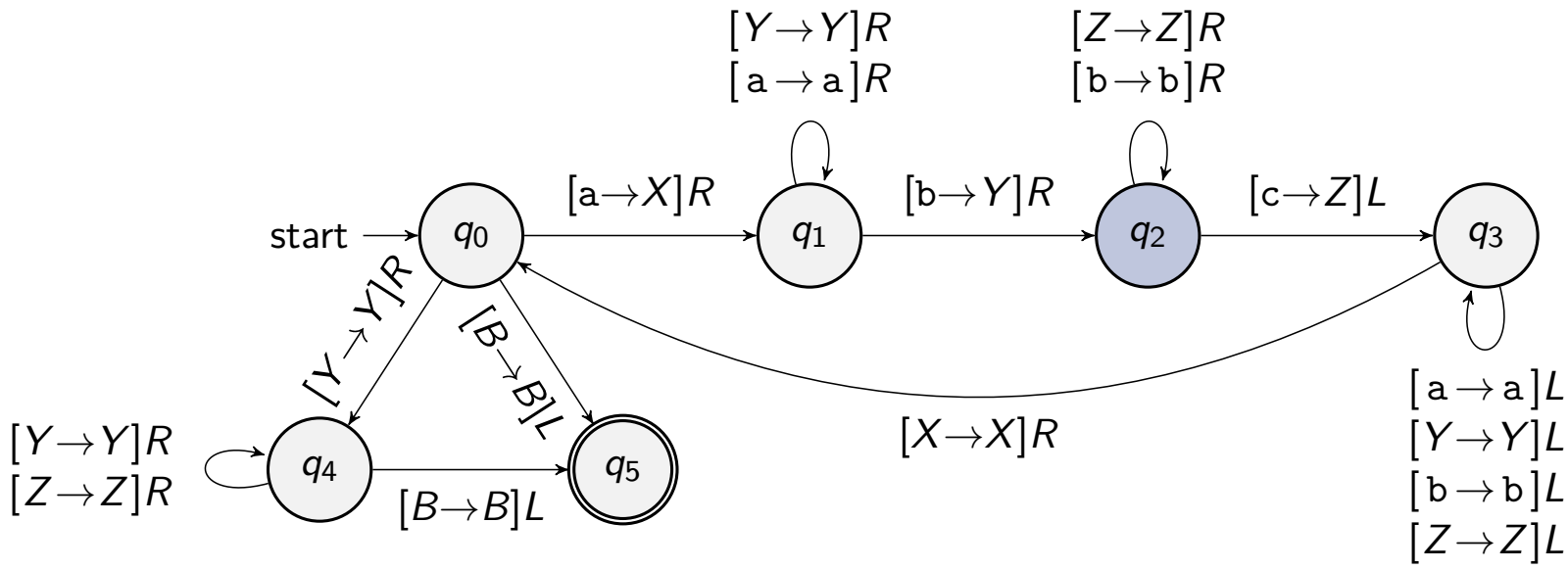


Find and Replace c with Z.

Construct a **Turing machine** that **accepts** the language:

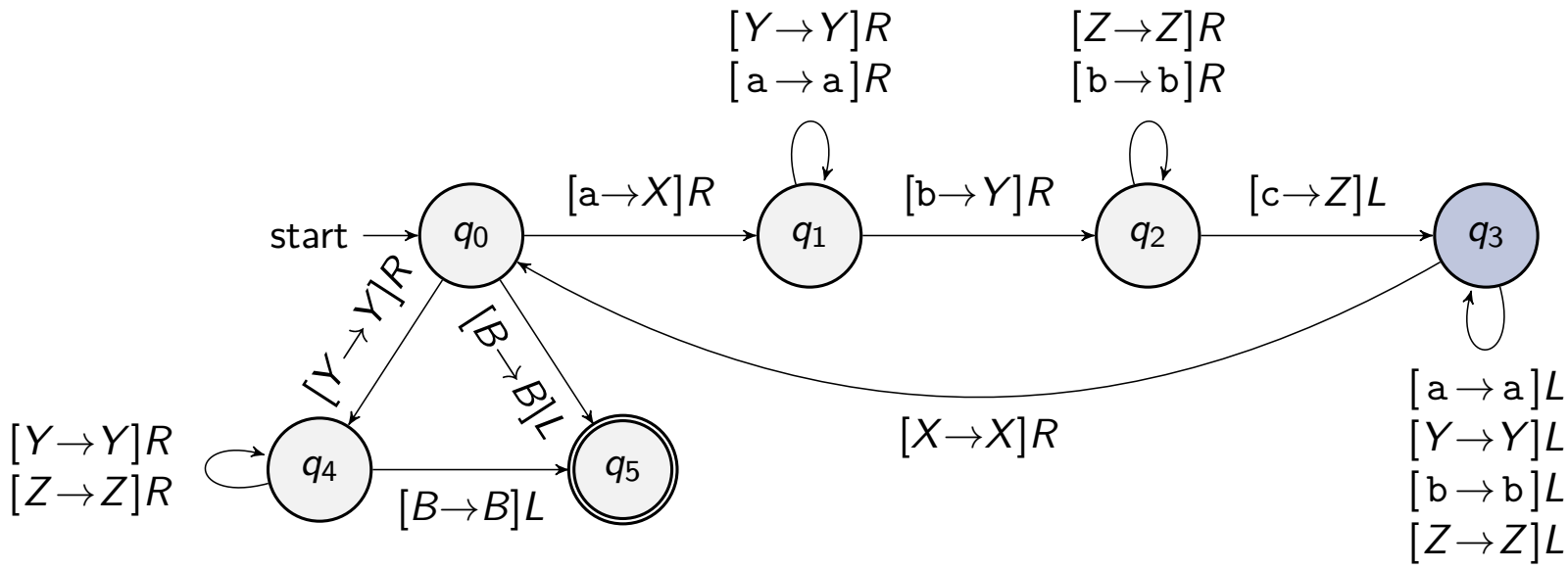
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$





Construct a **Turing machine** that **accepts** the language:

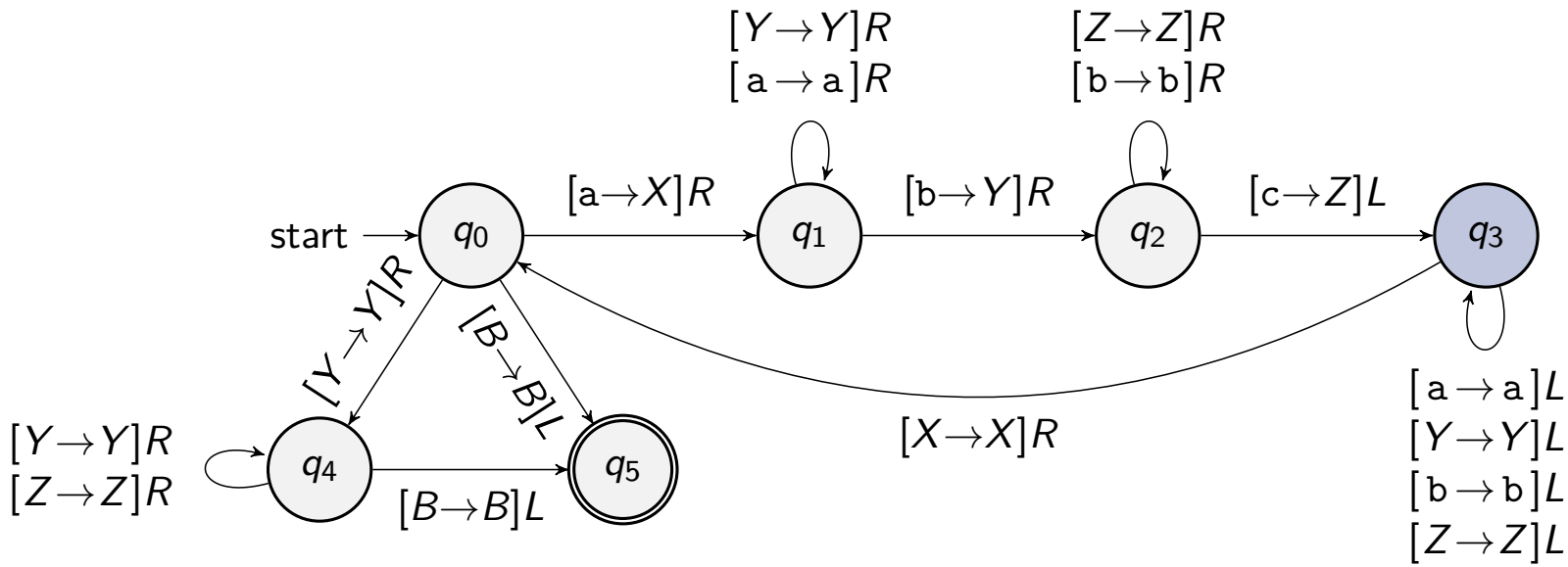
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$



Repeat until no a's left.

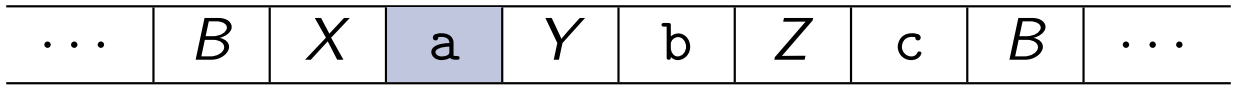
Construct a **Turing machine** that **accepts** the language:

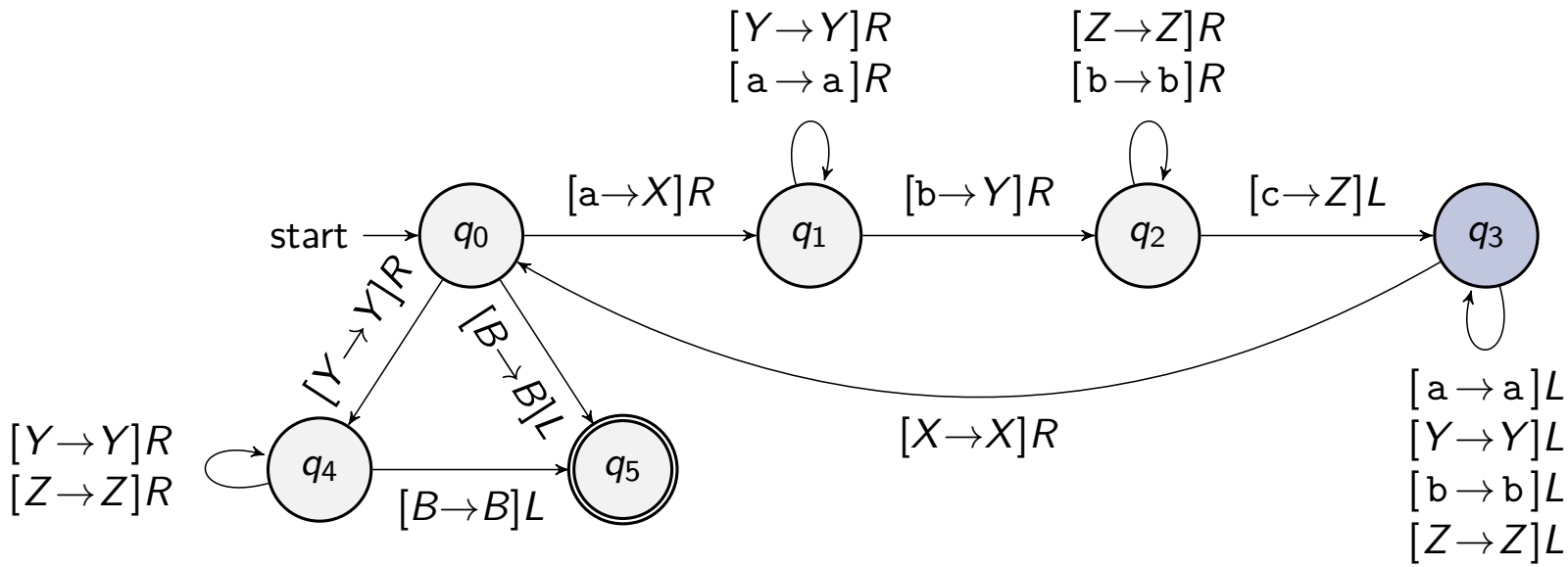
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$



Construct a **Turing machine** that **accepts** the language:

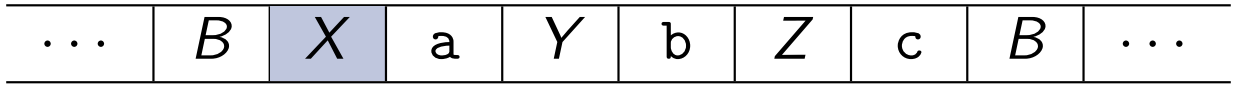
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$

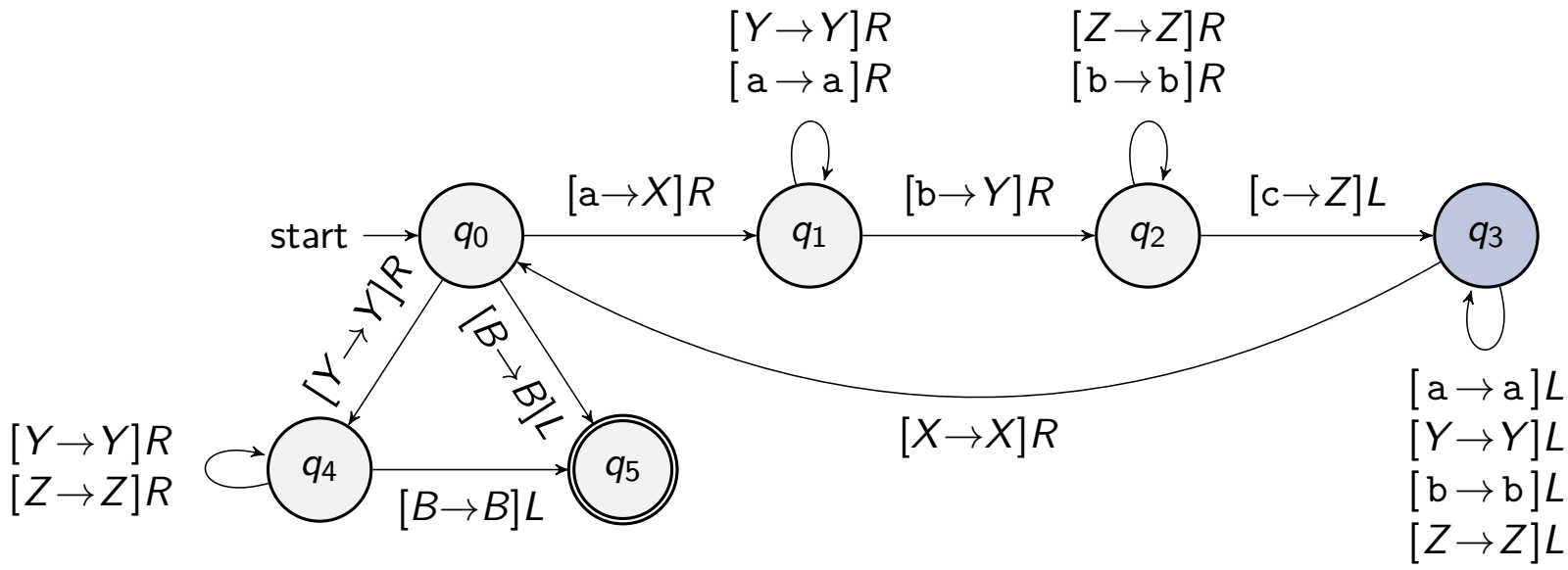




Construct a **Turing machine** that **accepts** the language:

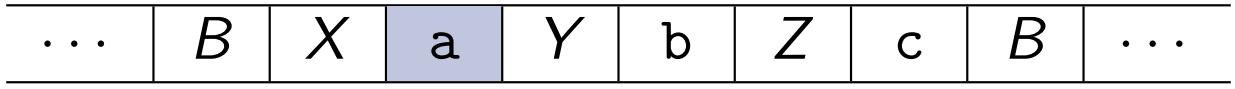
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$

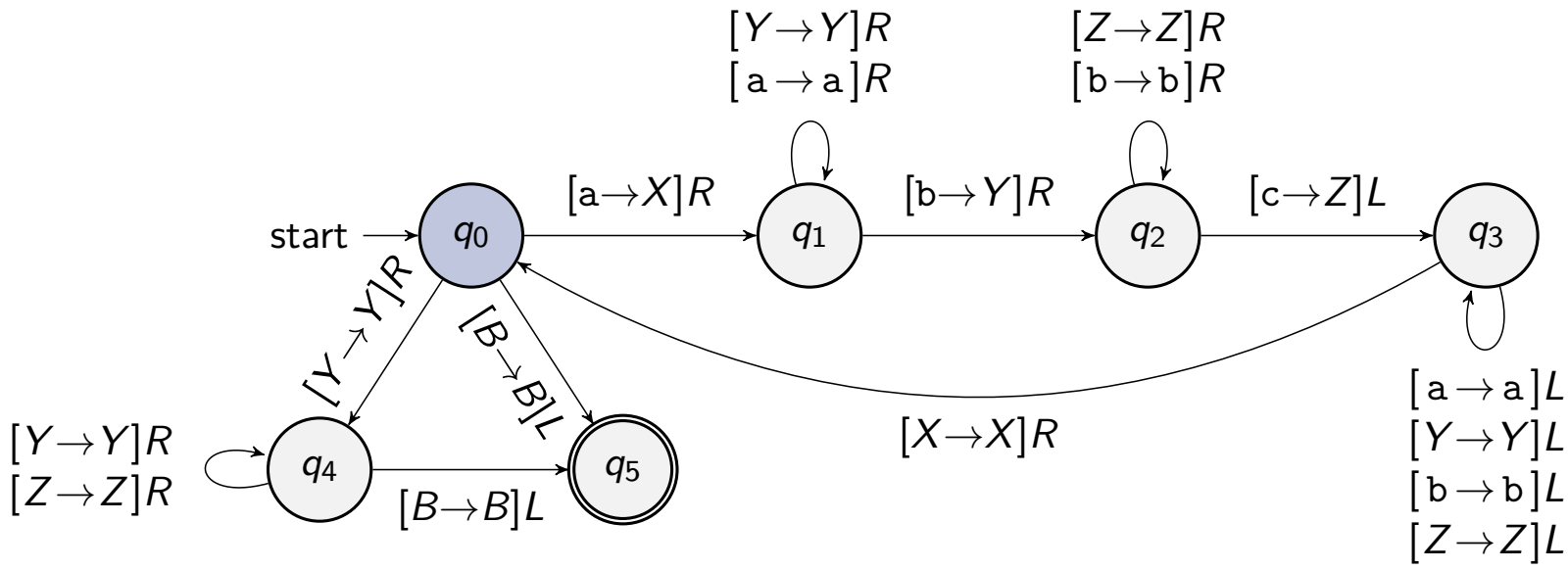




Construct a **Turing machine** that **accepts** the language:

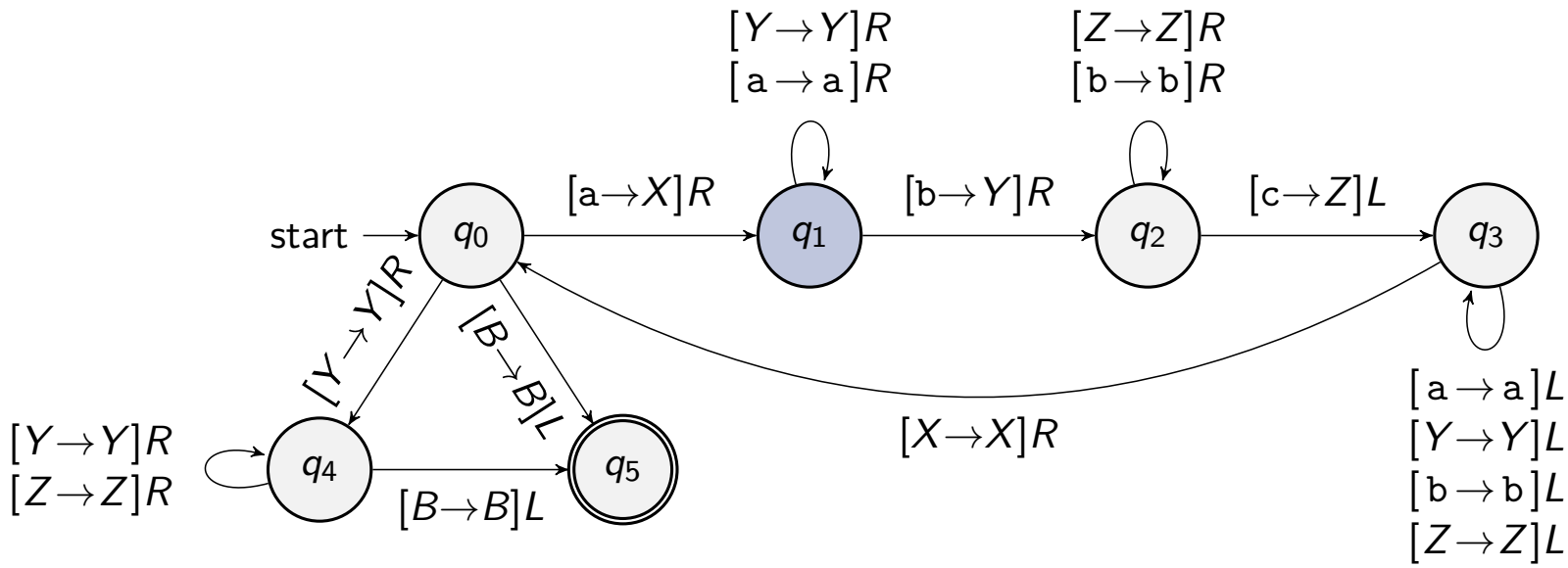
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$





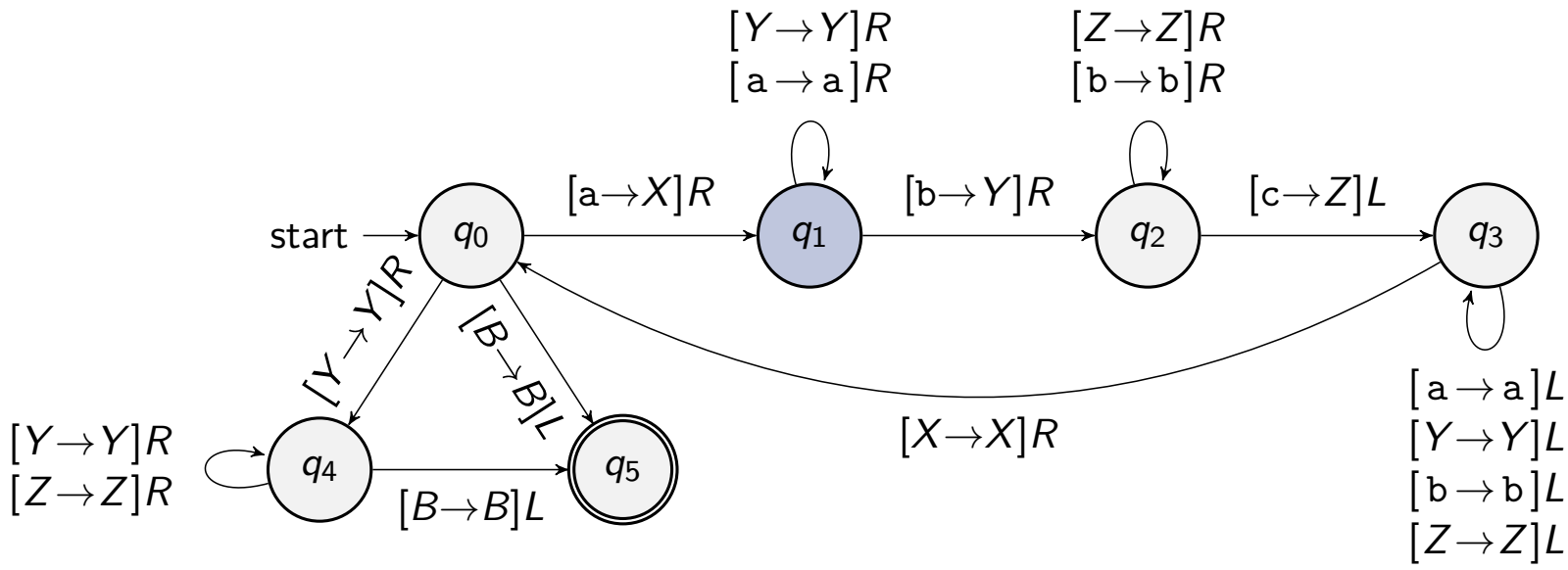
Construct a **Turing machine** that **accepts** the language:

$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$



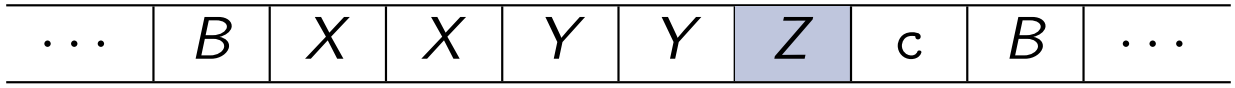
Construct a **Turing machine** that **accepts** the language:

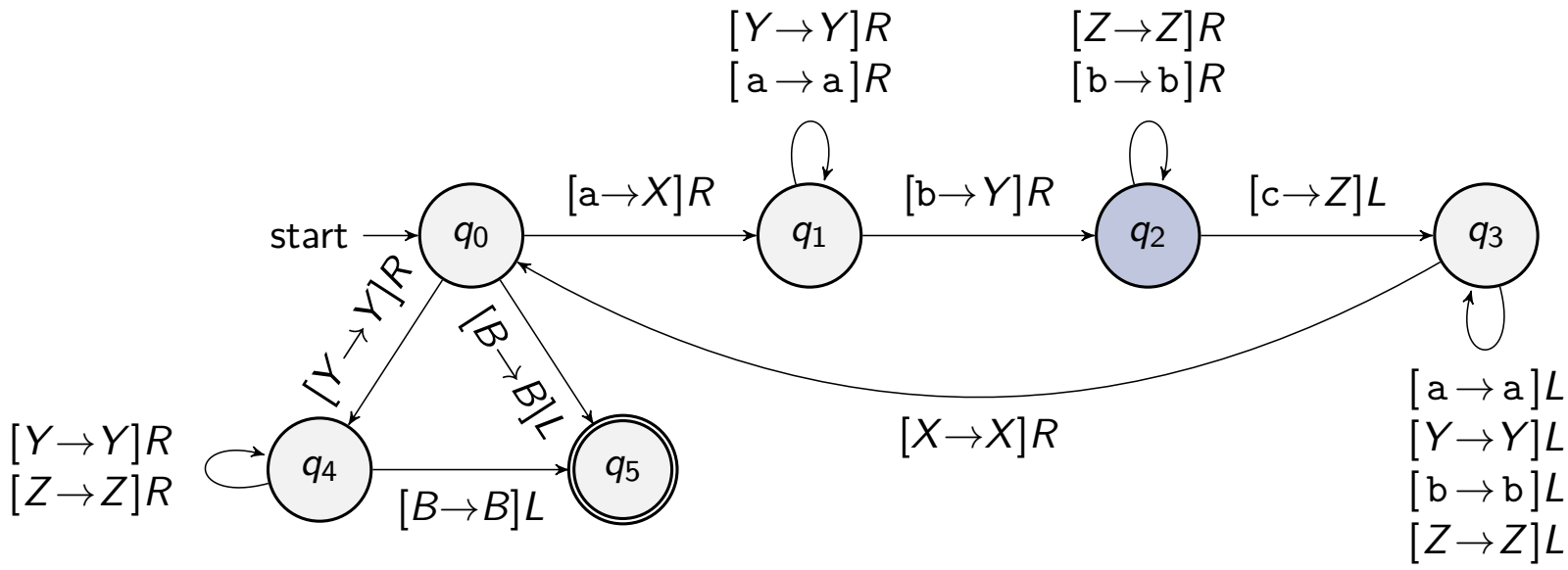
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$



Construct a **Turing machine** that **accepts** the language:

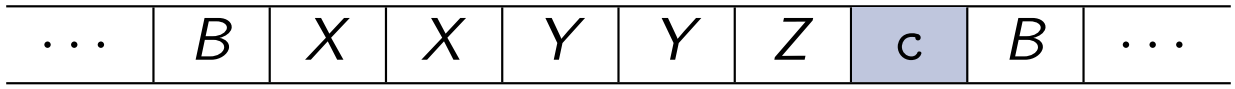
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$

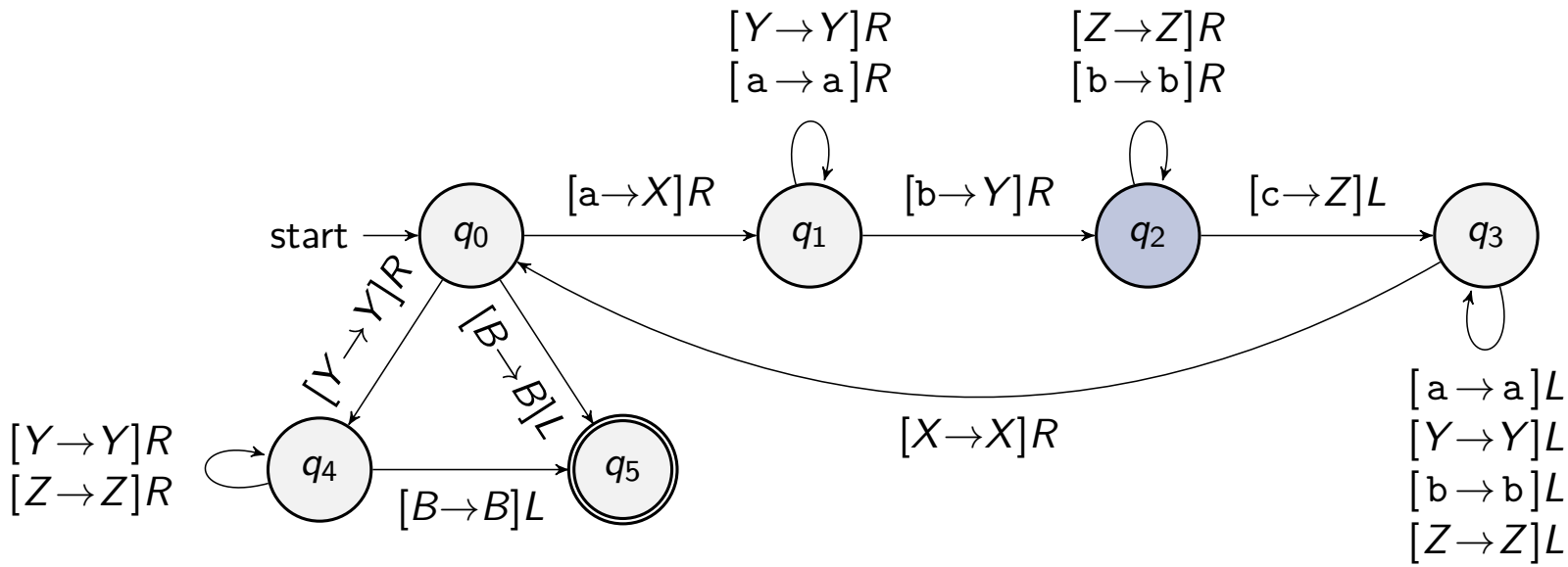




Construct a **Turing machine** that **accepts** the language:

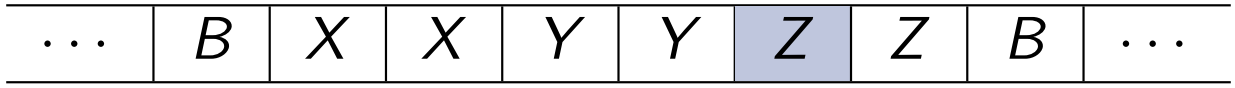
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$

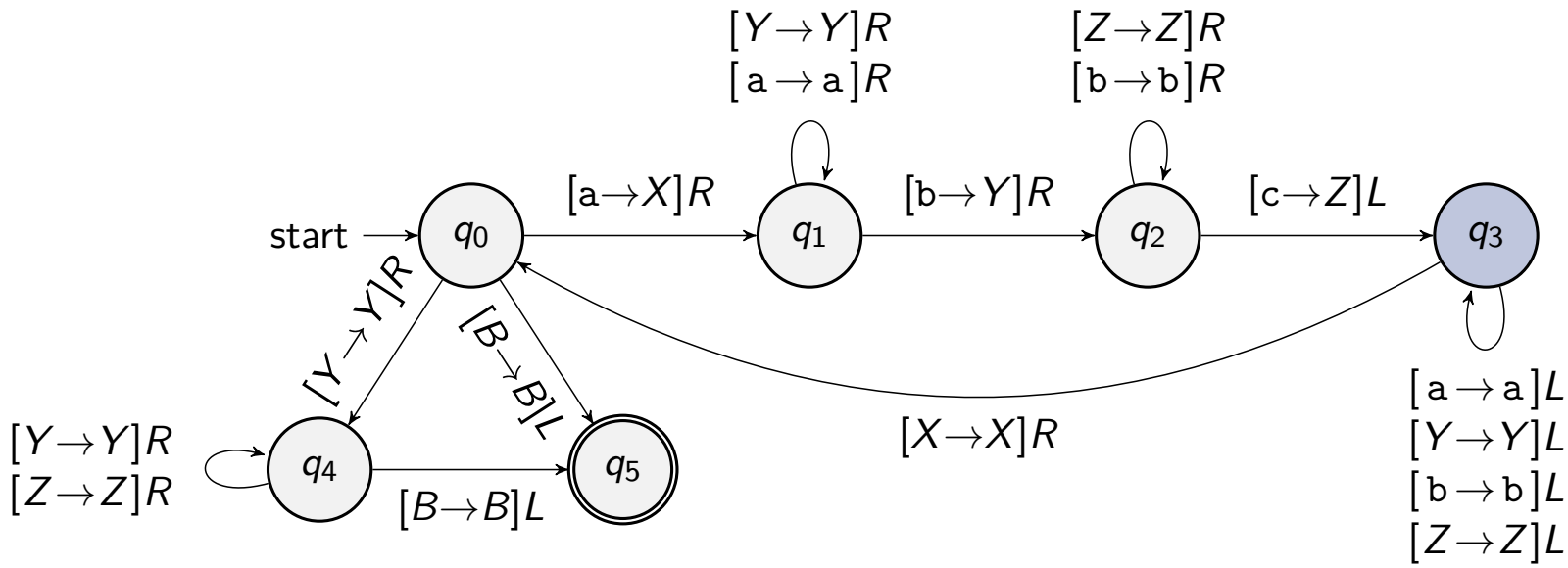




Construct a **Turing machine** that **accepts** the language:

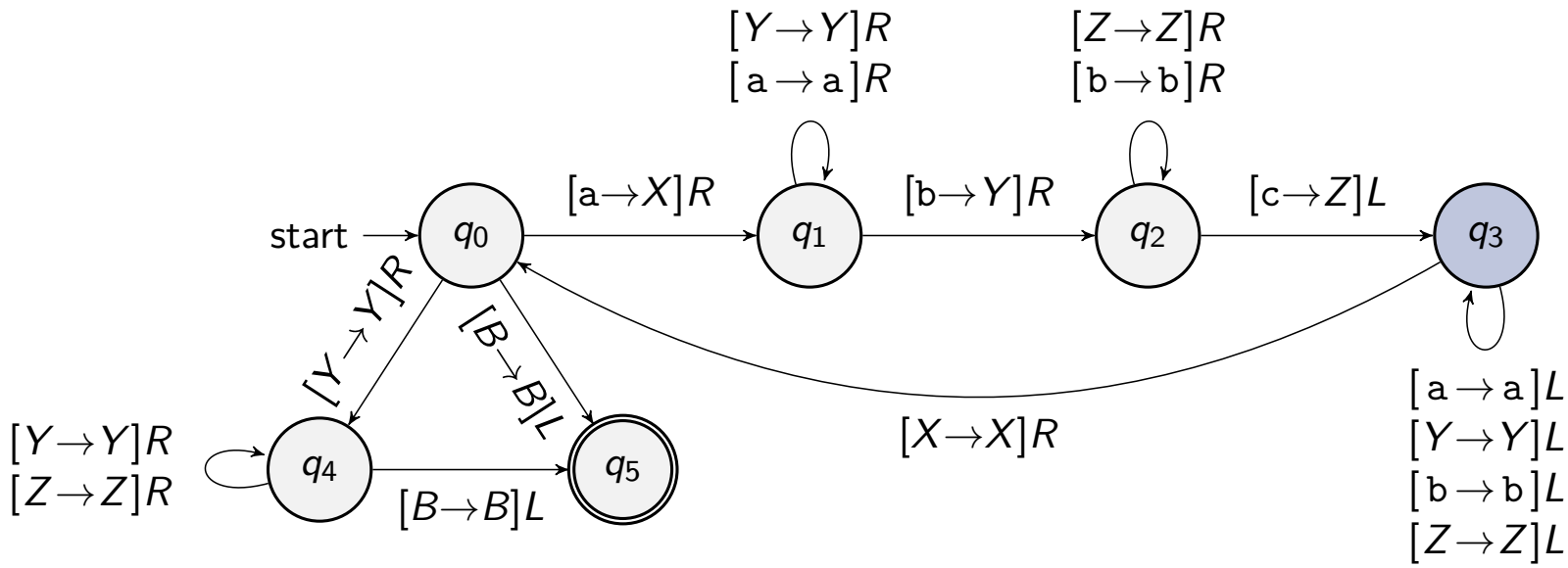
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$





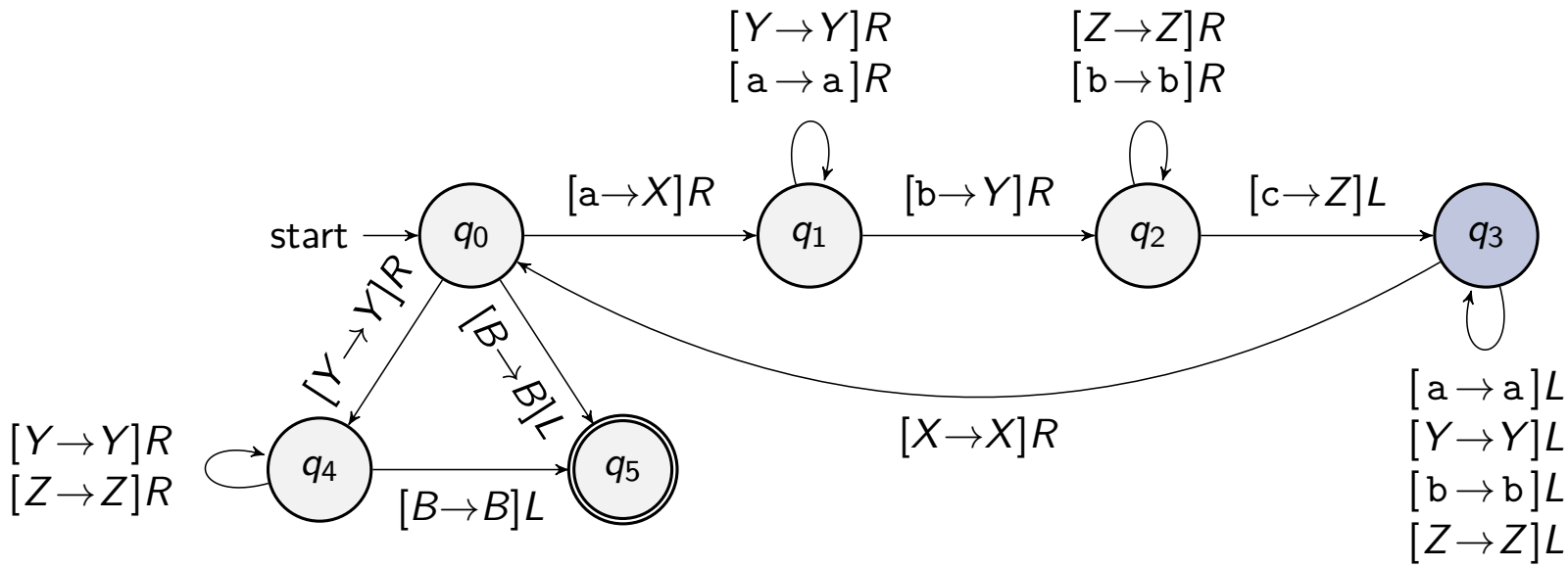
Construct a **Turing machine** that **accepts** the language:

$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$



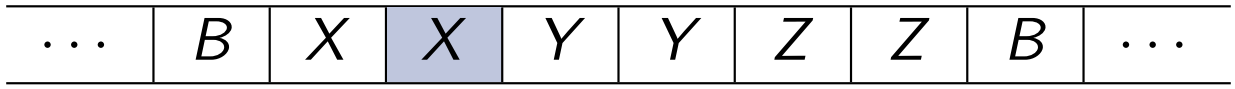
Construct a **Turing machine** that **accepts** the language:

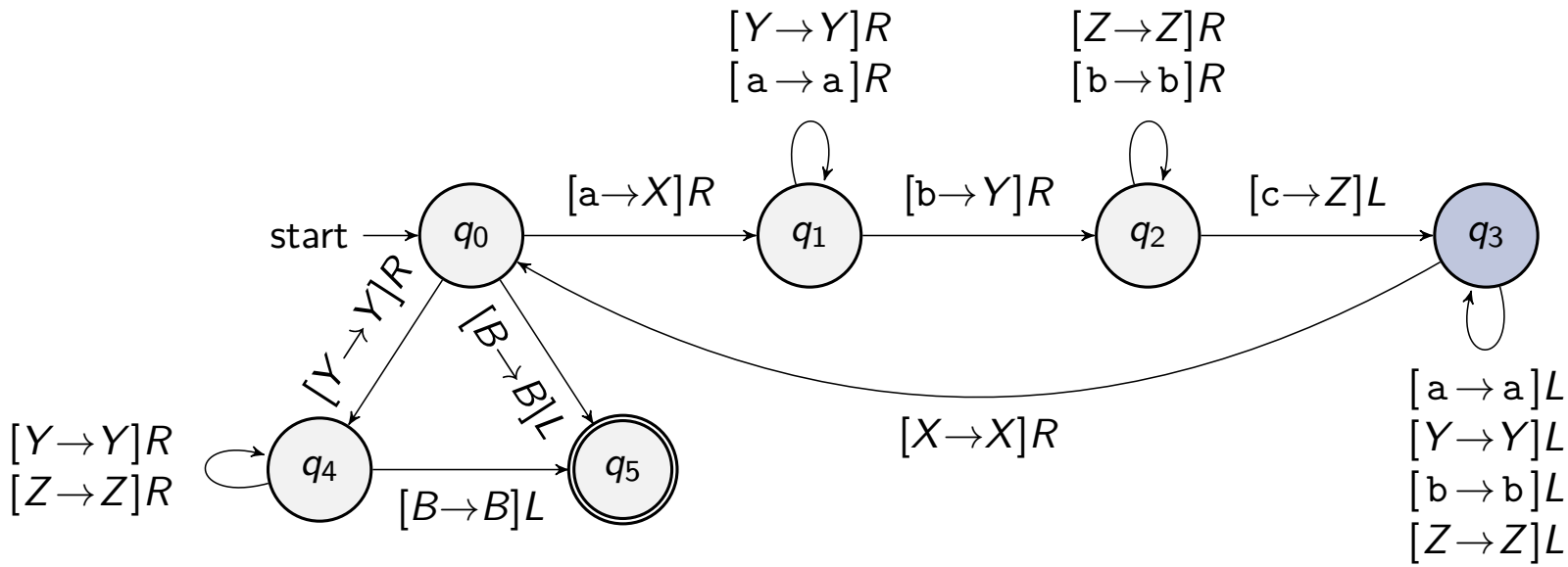
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$



Construct a **Turing machine** that **accepts** the language:

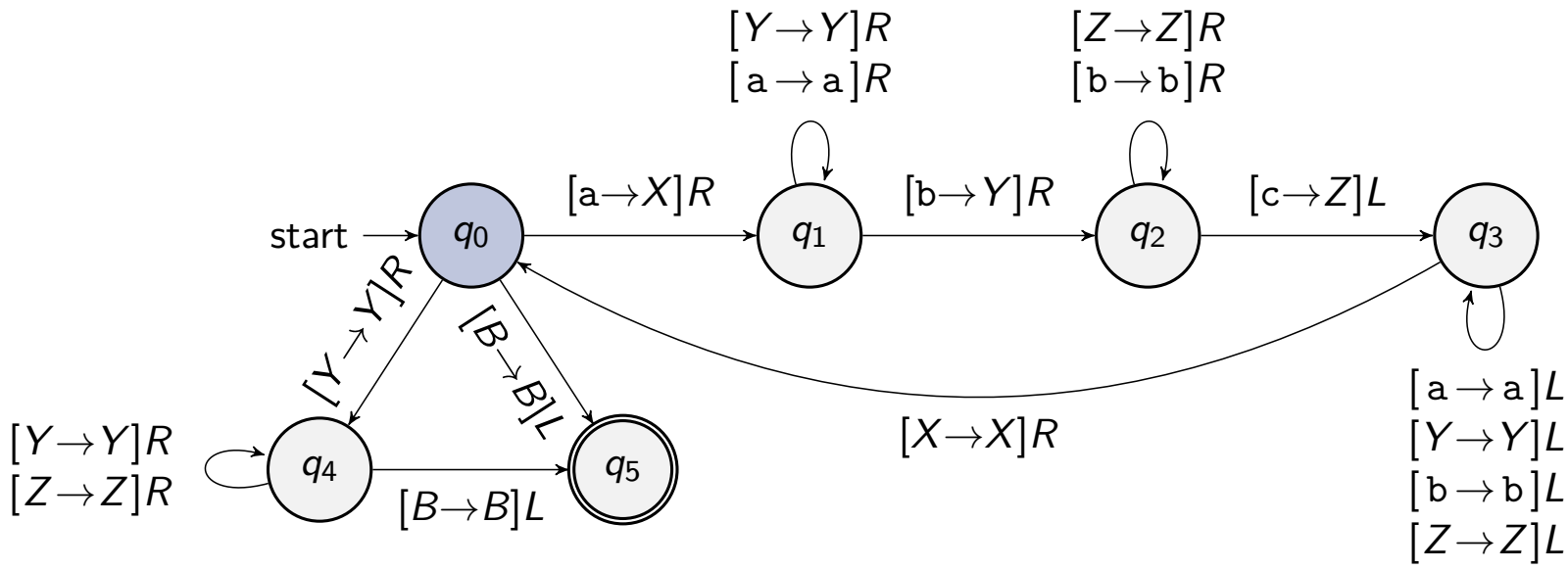
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$





Construct a **Turing machine** that **accepts** the language:

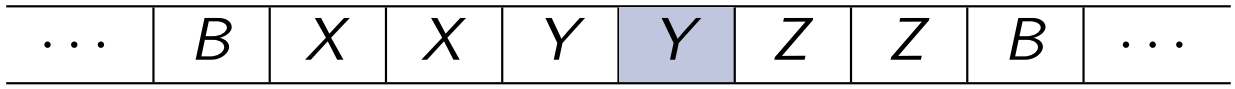
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$

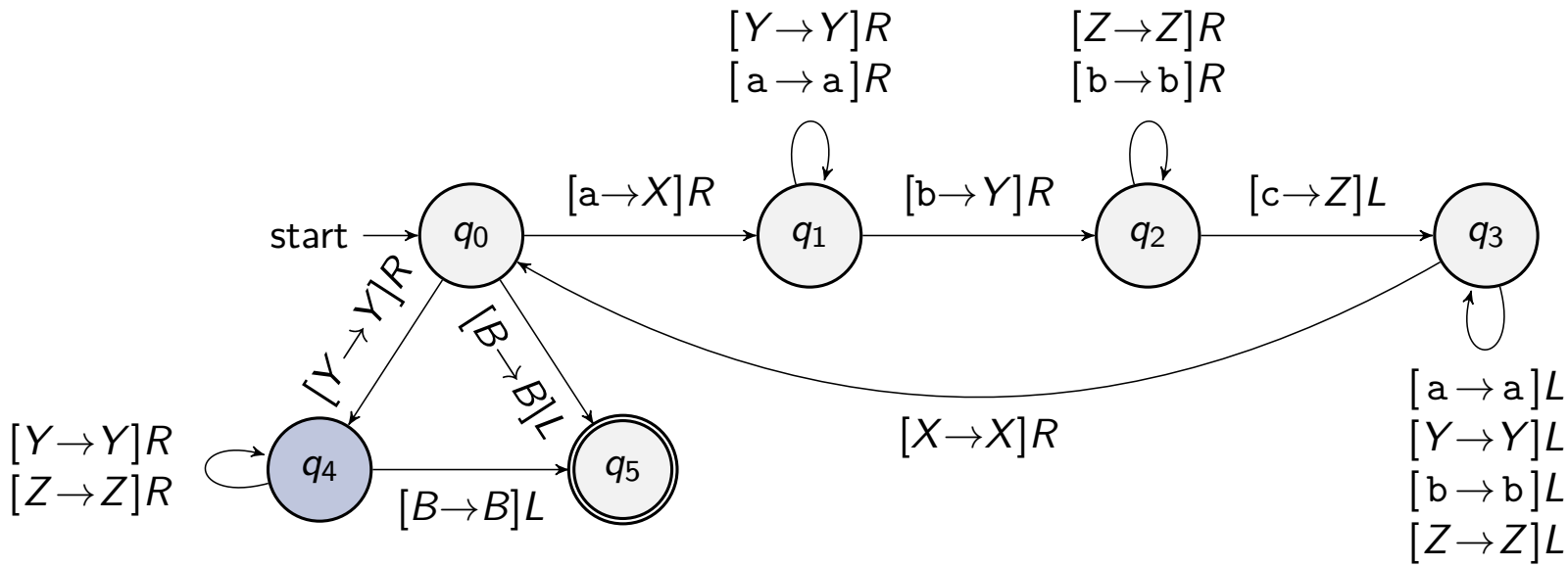


Now, no more a's. Check if only Y's and Z's are left.

Construct a **Turing machine** that **accepts** the language:

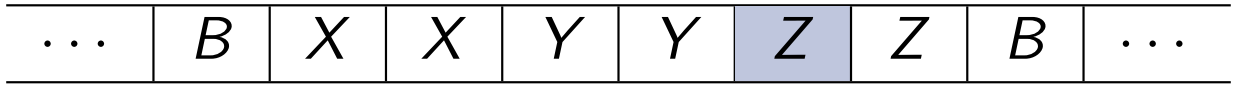
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$

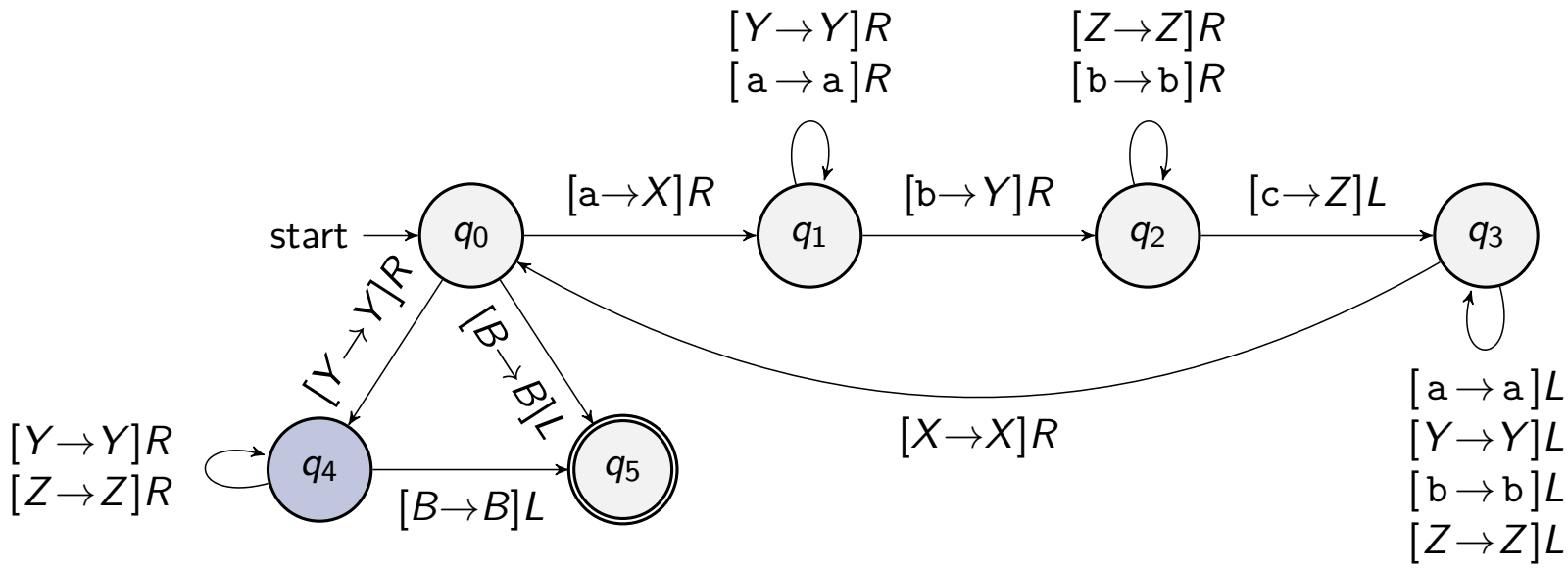




Construct a **Turing machine** that **accepts** the language:

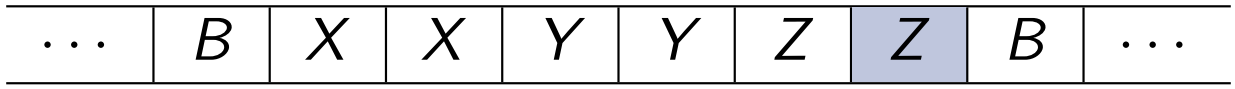
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$

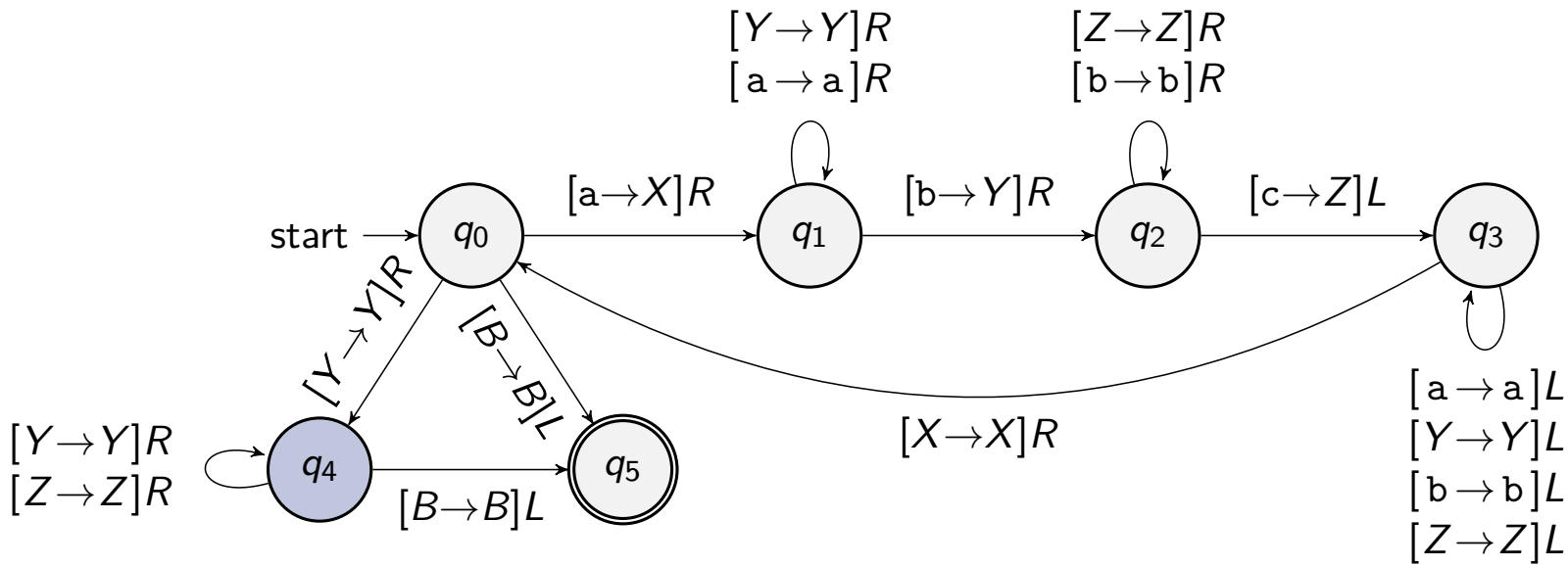




Construct a **Turing machine** that **accepts** the language:

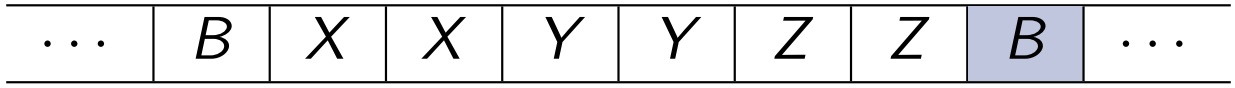
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$

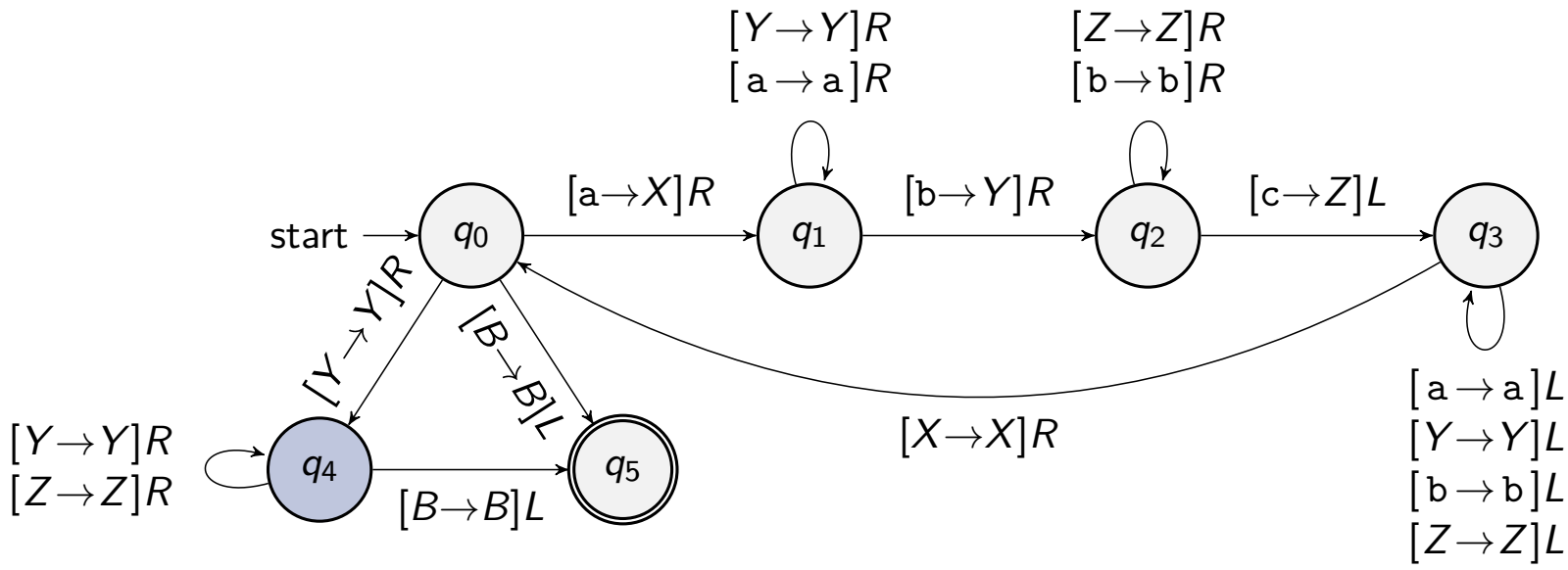




Construct a **Turing machine** that **accepts** the language:

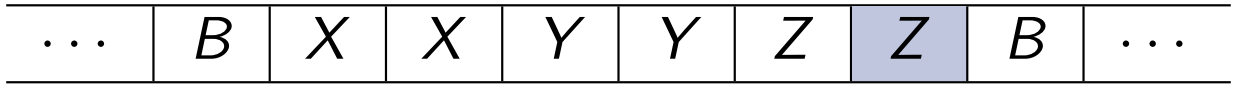
$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$

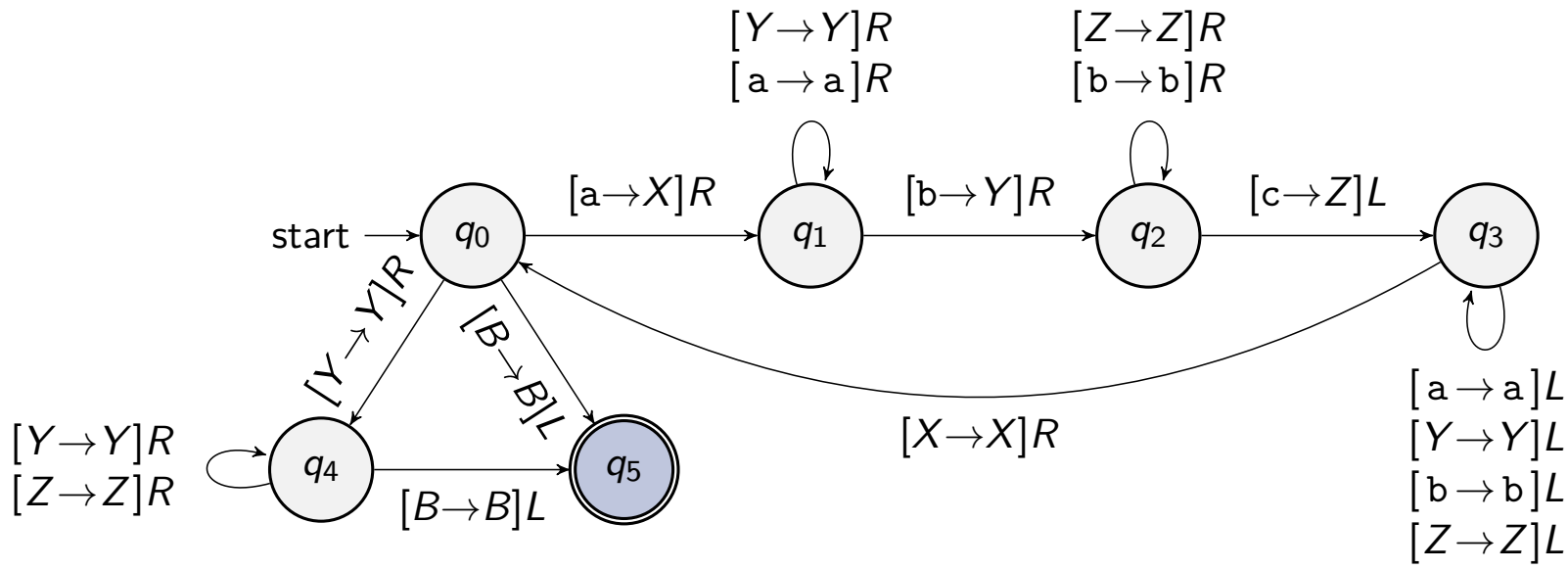




Construct a **Turing machine** that **accepts** the language:

$$L(M) = \{a^n b^n c^n \mid n \geq 0\}$$





Accept!