For each of questions A and B, match the grammars on the left with the sets they generate on the right. The correspondence is one-to-one. The start symbol in all cases is S.

A.

1.	$S \to aSbb \mid \varepsilon$	**d**	a.	$\{x \in \{a,b\}^* \mid x = \mathsf{rev}\, x\}$
2.	$S \to aaSb \mid \varepsilon$	**e**	b.	$\{a,b\}^*$
3.	$S \to aSb \mid bSa \mid SS \mid \varepsilon$	**c**	c.	$\{x \in \{a,b\}^* \mid \#a(x) = \#b(x)\}$
4.	$S \to aSa \mid bSb \mid a \mid b \mid \varepsilon$	**a**	d.	$\{a^n b^m \mid m = 2n\}$
5.	$S \to aSb \mid bSa \mid a \mid b \mid SS \mid \varepsilon$	**b**	e.	$\{a^n b^m \mid n = 2m\}$

B.

6.	$S \to aSb \mid T$	$T \to bTa \mid \varepsilon$		**g**	f.	$\{a^n b^{n+m} a^m \mid n, m \geq 0\}$
7.	$S \to TT$	$T \to aTb \mid \varepsilon$		**h**	g.	$\{a^n b^m a^m b^n \mid n, m \geq 0\}$
8.	$S \to TU$	$T \to aTb \mid \varepsilon$	$U \to bUa \mid \varepsilon$	**f**	h.	$\{a^n b^n a^m b^m \mid n, m \geq 0\}$

C. The following is a grammar in Greibach normal form for the set of balanced parentheses. The start symbol is S.

$$S \to \texttt{[}B \qquad\qquad B \to \texttt{]} \mid \texttt{]}S \mid \texttt{[}BB$$

Which of the following sentential forms would *not* occur in any derivation of the string `[[][]][]`?

a. `[[`BB

b. `[[]`B

c. `[[][`BB

d. `[[][]`B

e. `[[][]]`B ✓

f. `[[][]][`B

In this grammar, the number of B's in any sentential form generated from S is always the same as the number of unmatched left parens in the terminal string generated so far.