A radio station is deciding whether or not to broadcast violin music from six different composers — Holst, Mussorgsky, Ponchielli, Ravel, Stravinsky and Vivaldi. The music selected to broadcast is consistent with the following conditions.

If Mussorgsky is not played, Ponchielli is played.

If Vivaldi is not played, neither is Mussorgsky.

If Ravel is played, then Holst is not played.

If Ponchielli is played, so are Stravinsky and Ravel.

1. Which could be a complete and accurate list of composers the station decides to play?

A. Ravel, Holst
B. Mussorgsky, Ponchielli
C. Mussorgsky, Ravel, Stravinsky
D. Mussorgsky, Stravinsky, Holst, Vivaldi
E. Stravinsky, Holst

2. If Stravinsky and Ponchielli are both played, which one of the following must be true?

A. At most four of the six composers are played.
B. At least four of the six composers are played.
C. Both Stravinsky and Vivaldi are played.
D. If exactly four of the six composers are played, those four cannot include Ravel.
E. If exactly four of the six composers are played, those four must include Vivaldi.

3. If Ravel is not played, which one of the following CANNOT be true?

A. Stravinsky is played.
B. Holst is played.
C. Vivaldi is not played.
D. Ponchielli is not played.
E. Holst is not played.

4. What is the maximum number of composers out of the six who could be played?

A. two
B. three
C. four
D. five
E. six

5. Each of the following could be true EXCEPT

A. Holst is played but Stravinsky is not.
B. Holst is played but Vivaldi is not.
C. Mussorgsky is played but Ravel is not.
D. Vivaldi and Ponchielli are both played.
E. Ponchielli and Mussorgsky are both played.

6. Suppose the condition is added that if Vivaldi is played, Ponchielli is not played. If all other conditions hold, which one of the following could be true?

A. Mussorgsky and Ponchielli are both played.
B. Vivaldi and Stravinsky are both played.
C. Holst and exactly four others are played.
D. Ravel and exactly one other are played.
E. Exactly one composer is played.

Game 6 – Radio Station

1. D
2. E
3. C
4. D
5. B
6. B

This is a classic sorting game. You won't be able to draw any sort of a diagram–you have to go off instinct and the rules. Plot the elements out for each question to understand it if you need.

Question 1, as is the case with most first questions, is a matter of eliminating the four answer choices which break a rule. On Question 2, you can deduce that Ravel is played but Holst is not based on the rules. After this, you cannot deduce the exact arrangement further, but Mussorgsky cannot be played without Vivaldi, meaning that if there are exactly four, Vivaldi and not Mussorgsky is played.

For Question 3, you can deduce that Ponchielli cannot be played (because if he was, Ravel would be), and therefore you can infer from the first rule, that Mussorgsky must be played, which means Vivaldi is played under the second rule. C breaks this rule.

Remember that on questions like Question 4, look for "rules of exclusion"–those which say two things can't be together. Your only real rule of exclusion in this game is Ravel and Holst, and since Holst doesn't impel the existence of anyone else, your maximum is five–everybody but Holst. For Question 5, you can't have Holst and not Vivaldi because if Holst is played, Ravel can't be, which means Ponchielli can't be (fourth rule), which means Mussorgsky must be (first rule) which means Vivaldi must be (second rule).

The rule–change question is a little tricky. Vivaldi is required for Mussorgsky, excluding answer A. For C, Holst doesn't have three elements it could go with–it can't be with Ravel, and among the other four, neither Vivaldi nor just Mussorgsky can be with Ponchielli. D and E are out for similar reasons–you need either Mussorgsky or Ponchielli under the first rule, and these both command the presence of something else (Vivaldi, or Stravinsky and Ravel, respectively). Thus the answer is B.