**Solutions to Perfect Games**

**8 and 11**

The key to this game is getting the two piles even and keeping them even. If you go first, you would take 3 from the pile of 11. Then keep the two piles even.

**25**

Students will figure out that if there are 6 left and it is their turn, they will lose. If you leave your opponent with 12, you can always get it to 6. The other key numbers are 18 and 24. If a student goes first, they should take one. They should then get the number left to 18, 12, and then 6. This can be done by having each round have six coins taken. If you take 4, I take 2. If you take 1, I take 5.

The game of 100 is also won by taking one to start and then making sure each round has 11 taken. Some students can deduce that since the game of 5 is about multiple of 6 (5+1), the game of 10 would be about multiple of 11 (10+1).

**Game of 12**

This is the hardest game to figure out. To win you need to let your opponent go first and then mirror what they do. Take the piece or pieces that are directly across from the piece or pieces they took.