UNIT 10 EXERCISES 6-10

COMBINATIONS

2006B 7. Mr. and Mrs. Lopez have two children. When they get into their family car, two people sit in the front, and the other two sit in the back. Either Mr. Lopez or Mrs. Lopez must sit in the driver's seat. How many seating arrangements are possible?

(A) 4 **(B)** 12 **(C)** 16 **(D)** 24 **(E)** 48

2012B 8. A dessert chef prepares the dessert for every day of a week starting with Sunday. The dessert each day is either cake, pie, ice cream, or pudding. The same dessert may not be served two days in a row. There must be cake on Friday because of a birthday. How many different dessert menus for the week are possible?

(A) 729 **(B)** 972 **(C)** 1024 **(D)** 2187 **(E)** 2304

2011A 9. At a twins and triplets convention, there were 9 sets of twins and 6 sets of triplets, all from different families. Each twin shook hands with all the twins except his/her sibling and with half the triplets. Each triplet shook hands with all the triplets except his/her siblings and with half the twins. How many handshakes took place?

(A) 324 **(B)** 441 **(C)** 630 **(D)** 648 **(E)** 882

2002B 10. How many different integers can be expressed as the sum of three distinct members of the set $\{1, 4, 7, 10, 13, 16, 19\}$?

(A) 13 **(B)** 16 **(C)** 24 **(D)** 30 **(E)** 35