

14-2

Skills Practice

Permutations and Combinations

Determine whether each situation involves a *permutation* or *combination*. Explain your reasoning. **→ WHY ORDER IS, OR IS NOT, IMPORTANT.**

- dinner guests seated around a table
- a pattern of different widths of bars and spaces for a bar code
- selecting two yellow marbles out of a sack of yellow and blue marbles
- placing one can of each of 15 different types of soup along a store shelf
- selecting four candles from a box of ten
- the placement of the top ten finishers in a school's spelling bee
- choosing two colors of paint out of twenty to paint the walls and trim of a bedroom
- choosing a set of twelve pencils from a selection of thirty-six

Evaluate each expression.

9. ${}_5P_2$

10. ${}_6P_4$

11. ${}_7P_3$

12. ${}_9P_4$

13. ${}_7P_5$

14. ${}_5P_3$

15. ${}_6C_2$

16. ${}_9C_7$

17. ${}_8C_4$

18. ${}_7C_5$

19. ${}_{12}C_2$

20. ${}_{13}C_7$

21. ${}_{11}C_2$

22. ${}_5P_4$

23. ${}_{14}C_5$

24. ${}_{11}C_6$

25. $({}_4P_2)({}_3P_2)$

26. $({}_8C_6)({}_5P_1)$

NO CALCULATORS!

↓
All
work
on
loose-
leaf

↓
All work
on
loose leaf