Name _____ period _____ date _____ score_____

Evaluate each binomial coefficient.

1. $\begin{pmatrix} 5 \\ 3 \end{pmatrix}$ 2. $\begin{pmatrix} 7 \\ 5 \end{pmatrix}$ 3. $\begin{pmatrix} 50 \\ 49 \end{pmatrix}$ 4. $\begin{pmatrix} 1000 \\ 0 \end{pmatrix}$ 5. $\begin{pmatrix} 60 \\ 20 \end{pmatrix}$

Use the binomial theorem to expand each expression.

6. $(x+1)^5$

7. $(x-2)^6$

8. $(3x-1)^4$

9. $(x^2+y^2)^5$

10. $(\sqrt{x}+\sqrt{2})^6$

11. $(ax-by)^5$

Find the indicated coefficient or term.

12. The coefficient of x^6 in the expansion of $(x+3)^{10}$

13. The coefficient of x^7 in the expansion of $(2x-1)^{12}$

14. The coefficient of x^5 in the expansion of $(3x-4)^9$

15. The 5th term of $(x+3)^7$

16. The 6th term in $(3x+2)^8$

17. The 4th term in $(2x^2 - y)^9$