- 1. Use Pascal's triangle to compute  $\binom{6}{3}$  and  $\binom{6}{4}$
- 2. Use the Binomial Theorem to expand each of the following:

(a) 
$$(p+q)^5$$
 (b)  $(u-v)^4$  (c)  $(x-3y)^3$ 

3. Find the coefficient of the given term.

(a)  $u^7 v^3$  in  $(2u - v)^{10}$  (b)  $x^8 y^3$  in  $(2x + \frac{y}{2})^{11}$ 

4. Simplify each of the following:

(a) 
$$\sum_{k=0}^{11} {n \choose k} 2^{n-k} 3^k$$
 (b)  $\sum_{k=0}^{11} {n \choose k} 4^k$