

## TAKING COEFFICIENTS IN GENERATING FUNCTIONS

FEBRUARY 25, 2010

- (1) coefficient of  $q^7$  in  $2q^2/(1 - q^5)/(1 - q^2)$
- (2) coefficient of  $q^8$  in  $(1 + q + 2q^2)/(1 - q^2)^4$
- (3) coefficient of  $q^8$  in  $(3 + 2q^2)/(1 - 3q + q^2)$
- (4) coefficient of  $q^7$  in  $1/(1 + 2q)^3$
- (5) coefficient of  $q^6$  in  $(1 + q)/(1 - q - q^2)$
- (6) coefficient of  $q^7$  in  $(1 + q^3)/(1 - q)/(1 - q^2)$
- (7) coefficient of  $q^{10}$  in  $(1 + 3q)/(1 - q - q^2)$
- (8) coefficient of  $q^6$  in  $1/((1 - 2q)(1 - q^3))$
- (9) coefficient of  $q^9$  in  $(1 + 5q)/(1 + q)^3$
- (10) coefficient of  $q^7$  in  $(1 + q)/(1 + q)^3$
- (11) coefficient of  $q^6$  in  $(q + q^2)/(1 - q^2)^3$
- (12) coefficient of  $q^{12}$  in  $(1 - q^4)/(1 + q - q^3)$
- (13) coefficient of  $q^{10}$  in  $(1 + q + q^2)/(1 - q)^4$
- (14) coefficient of  $q^4$  in  $1/(1 - 2q - 4q^2)$
- (15) coefficient of  $q^9$  in  $(1 - q)/(1 + 2q)^3$
- (16) coefficient of  $q^8$  in  $(1 + q + q^2)/(1 - 3q^2)^5$