

Table 18.6 Probabilities $P(X|I)$ for pairs of genotypes (X) given the number (I) of alleles shared IBD, assuming HWE.

Genotype X	$I = 0$	$I = 1$	$I = 2$
(AA, AA)	p_A^4	p_A^3	p_A^2
(AA, AB)	$2p_A^3p_B$	$p_A^2p_B$	0
(AA, BB)	$p_A^2p_B^2$	0	0
(AA, BC)	$2p_A^2p_Bp_C$	0	0
(AB, AB)	$4p_A^2p_B^2$	$p_Ap_B(p_A + p_B)$	$2p_Ap_B$
(AB, AC)	$4p_A^2p_Bp_C$	$p_Ap_Bp_C$	0
(AB, CD)	$4p_Ap_Bp_Cp_D$	0	0