Huntington’s disease is a late-onset disease caused by a single, dominant mutation.

The following pedigree is for a family with a history of Huntington disease. Those

individuals who are already suffering from the disease are shaded black. However,

some additional individuals in generations II and III also have the mutant

Huntington’s allele and will develop Huntington disease but have not yet shown

symptoms. Assume that individuals marrying into the family have no history of

Huntington disease (that is, they are homozygous recessive for the gene). Also

assume that the diseased male in generation I is heterozygous for the disease gene.







a

b

c

e

f

g

d

A b c d e f g h I j k l m

(a) If individuals IIIg and IIa had a child together, what is the probability that the

child would develop Huntington disease?

(b) If you were told that individual IId also developed Huntington disease, would the

probability calculated in (i) change? If so, what is the new probability?