

Genetics assignment – Huntington – Answers

1. See WB 1.3 for an example (round: female, square: male etc.)
2. Dominant, see 7, 8 and 15
Once with 7 and 8 having Aa, 16 and 17 AA/Aa, 15: aa
Once with 7, 8, 15 and 16 having aa and 15 having AA/Aa which is not possible.
3. 4, 5, 7, 8, 10, 12, 13, → Aa
1, 16, 17 → Aa of AA
2, 3, 6, 9, 11, 14, 15, 18, 19 → aa
4. 12: Aa marries aa, so the chance will be $\frac{1}{2}$ (50%).
5. 19: aa marries AA/Aa. Chance to a healthy child is $\frac{1}{4}$. Chance to these four children = $\frac{1}{4} * \frac{1}{4} * \frac{3}{4} * \frac{3}{4}$ and there are 6 possibilities, so the answer is: 27/128.
6. Yes, 7 is Aa. When a sperm donor is aa, you change the change to a child with the disease from $\frac{3}{4}$ into $\frac{1}{2}$.
7. Person 20 is an unknown person. But 19 has aa, so a sperm donor is not needed. You can't decrease the change to a child with Huntington's.
8. No, look at 7, 8 and 15. Also 4 and 8 are not possible.
9. A could be Aa or aa, the wife has aa. The kids have the a chance of $\frac{1}{4}$ to have the disease.

b) is an extra question, not needed for the test