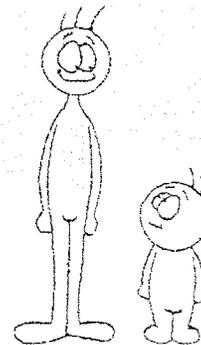


Conclusion: Use the following **Height Table** to answer the questions.

Penny Situation	Height
0 Tails and 6 Heads	~ 6 feet 1 inches
1 Tails and 5 Heads	~ 5 feet 11 inches
2 Tails and 4 Heads	~ 5 feet 9 inches
3 Tails and 3 Heads	~ 5 feet 7 inches
4 Tails and 2 Heads	~ 5 feet 5 inches
5 Tails and 1 Heads	~ 5 feet 3 inches
6 Tails and 0 Heads	~ 5 feet 1 inches



Remember: Heads are dominant genes that have an effect of making one taller.
Tails are recessive and have an effect of making one shorter.

1. Each parent gives (all or half) of their genetic material to their children. Circle one.

Example for the rest of the questions: A man is **5 feet 7 inches tall**, has 3 heads (dominant genes) and 3 tails (recessive genes). He will give 3 genes to his child. These 3 genes will be given randomly. The following are the possible genes for his sperm:

- He can give 3 dominant genes (heads) and 0 recessive genes (tails).
- He can give 2 dominant genes (heads) and 1 recessive gene (tails).
- He can give 1 dominant gene (heads) and 2 recessive genes (tails).
- He can give 0 dominant genes (heads) and 3 recessive genes (tails).

These are all the possible combinations that he can give his child. The height of the mother will dictate the genes that she will give to the child. The combination of the mother's genes and the father's genes will decide the height of the child.

2. If a male is **5 feet 9 inches tall**, it means that he has 4 dominant genes and 2 recessive. He will only give 3 genes to his child. What are the possible combinations of genes that he can give?

- He can give _____ dominant and _____ recessive.
- He can give _____ dominant and _____ recessive.
- He can give _____ dominant and _____ recessive.

3. The male is **5 feet 7 inches** and the female is **5 feet 5 inches**. Is it possible for them to give their child the necessary genes so the child can be **5 feet 11 inches** tall? Explain or diagram your answer:

4. If 2 parents are **5 feet 7 inches**, is it possible to have a child that is at least 6 feet tall? Show how.

What is the maximum height for the children? _____ Minimum height? _____

5. List 2 other polygenic human traits:

6. How are polygenic traits different in their phenotypes than traits with just one set of genes?