Puzzle #1

**Background**: You are a geneticist and on your first day of work, a man with purple ears walks into your office. You interview the man and find out the following information about the family.

**Pedigree:** The man’s mother and one of his sisters also has purple ears, but his father, brother, and two other sisters do not. The man and his normal-eared wife had 7 children, including four boys and three girls. Two of the girls and two of the boys have purple ears.

Use the gummy bears in bag 1 to create a pedigree for this family following the trait of Purple Ears.

* Yellow represents unaffected (do not have it) individuals.
* Red represents affected individuals (with purple ears).

Draw this pedigree in your notebook and answer the following questions using complete sentences:

1. Is purple ears a dominant or recessive trait? How do you know?
2. How many carriers are in this family and who are they?
3. If the man’s mother did not have purple ears, how could that change this pedigree?
4. Is purple ears a sex-linked trait? How can you tell?