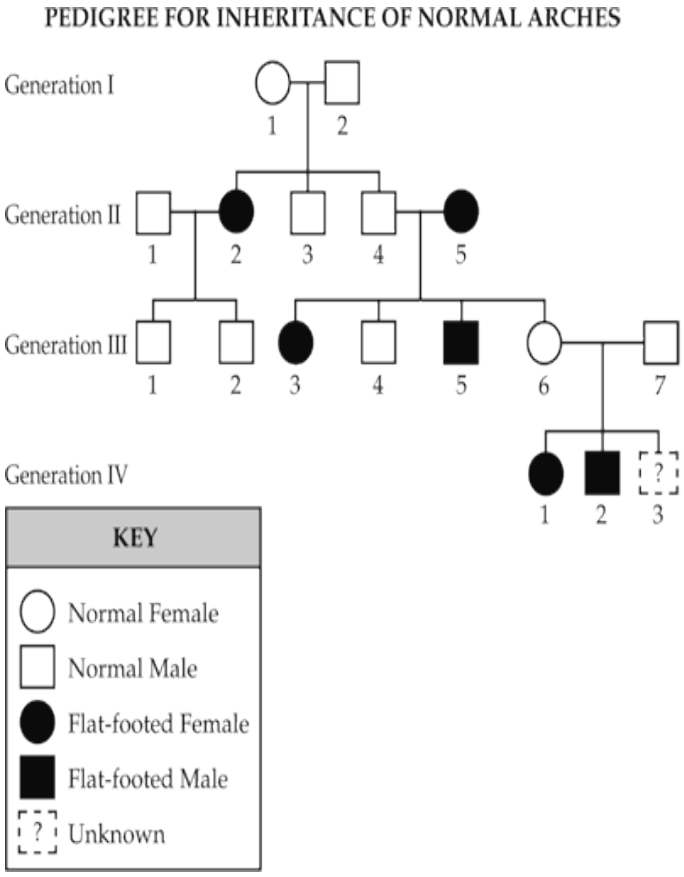
Name_____ Date_____

# Pedigree Practice H.S.A. Questions - Homework




**Use the pedigree to the left to answer the following questions. Flat-footed is a recessive trait (a).**

1. Individuals III-6 and III-7 have two children and are expecting a third child. Their two children have flat feet. What is the chance that the third child will have normal arches?

**A** 25% B. 75% **C.** 50% **D** 100%

2. According to the Pedigree, which of these Punnett squares shows the cross between Individual II-4 and Individual II-5?

A)

| | A | A |
|---|---|---|
| A | | |
| a | | |

B)

| | A | a |
|---|---|---|
| a | | |
| a | | |

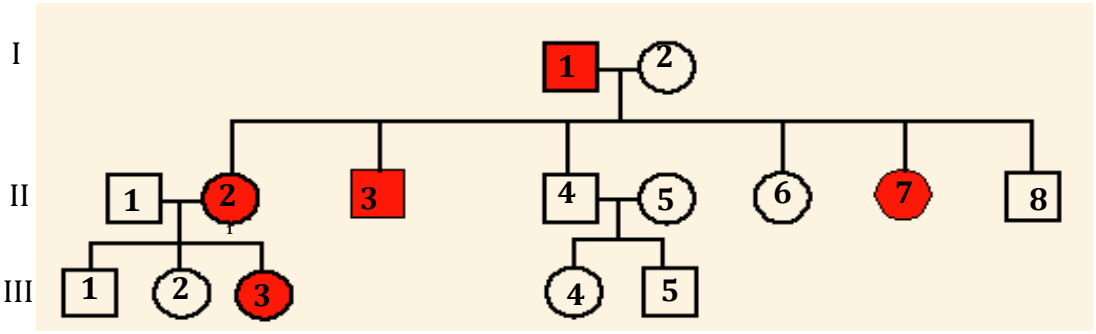
C)

| | A | a |
|---|---|---|
| A | | |
| a | | |

D)

| | A | A |
|---|---|---|
| a | | |
| a | | |

**Problem 2**: The pedigree chart shows the inheritance of the trait for diabetes over three generations. Having diabetes (d) is recessive to not having diabetes (D).




**1. Which individuals are least likely to have a heterozygous genotype?**

A) III-1 C) II-1
B) I-2 D) II-5

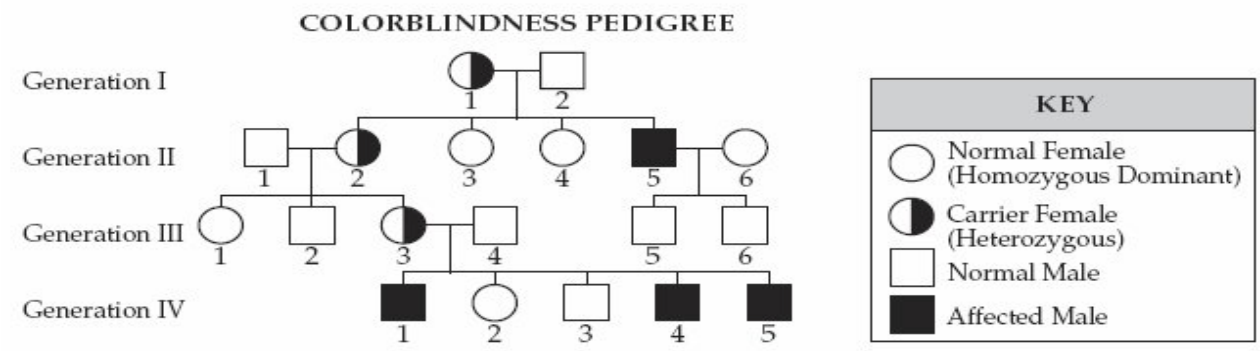
**2. Which two individuals have identical genotypes for the trait?**

A) I-I and I-2
B) II-1 and II-2
C) II-4 and III-5
D) III-1 and III-3

3. **Find the genotypes of Individual II-1 and II-2 and their offspring**

II-1_____ II-2 _____ III-1 _____ III--2 _____ III-3_____

## Use the pedigree below to answer the following questions:




1) Which of these best explains the pattern of inheritance for the colorblindness trait?

a) The allele for colorblindness is not sex-linked.
b) The allele for colorblindness is carried on the X-chromosome.
c) The allele for colorblindness is dominant to the allele for normal vision.
d) The allele for colorblindness occurred in Generation II as a new random mutation.

Why did you choose this answer? _____

2) How many individuals **are colorblind** in the four generations shown in the pedigree?

A) 3 B) 4 C) 7 D) 12

3) In generation IV, individual 5 married someone who is not a carrier of red-green colorblindness. If they have a female child, what is the chance that she will be born with red-green colorblindness? Draw a punnett square!

A) 0% B) 25% C) 50% D)100%

4) a. What is the genotype of individual I-1? _____

b. How many other individuals in the pedigree HAVE the same genotype as individual I-1? _____

5) What is the probability that individuals IV-4 and a carrier for the disease would have a child with the disease? Draw a punnett square!

a. 25% c. 75%
b. 50% d. 100 % e. None of the above

**6)** a. According to the Pedigree, which of these Punnett squares shows the cross between Individual IV-3 and a mate who is a **carrier** for the disease.

A)

| | $X^B$ | $X^B$ |
|---|---|---|
| $X^B$ | | |
| Y | | |

B)

| | $X^B$ | $X^b$ |
|---|---|---|
| $X^B$ | | |
| Y | | |

C

| | $X^B$ | $X^b$ |
|---|---|---|
| $X^b$ | | |
| Y | | |

D)

| | $X^b$ | $X^b$ |
|---|---|---|
| $X^b$ | | |
| Y | | |

b. What is the probability that their child will HAVE the disease? _____