

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

## Genetics Review Worksheet

- 1) From your Punnett Square above, cross the four possible outcomes with another healthy carrier (Ff). Assume autosomal recessiveness.

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| <b>F</b> |  |  |
| <b>f</b> |  |  |

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| <b>F</b> |  |  |
| <b>f</b> |  |  |

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| <b>F</b> |  |  |
| <b>f</b> |  |  |

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| <b>F</b> |  |  |
| <b>f</b> |  |  |

- From all four Punnett Squares, circle all the homozygous recessive possibilities.
  - From all four Punnett Squares, shade in all the homozygous dominant possibilities.
- 2) PKU is an autosomal recessive genetically transmitted condition that can ultimately lead to brain damage. Persons who are heterozygous are healthy even though they carry the PKU allele. Persons who are homozygous recessive have the disease. Cross a heterozygous carrier with a person who has PKU. Show your results below.

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What is the probability of getting a:

- Homozygous dominant offspring? \_\_\_\_\_
  - Homozygous recessive offspring? \_\_\_\_\_
  - Carrier offspring? \_\_\_\_\_
  - Healthy offspring? \_\_\_\_\_
- 3) A research lab requires a supply of pure breeding freckled frogs (**FF**) for a cloning experiment. A lab assistant has a pet frog with freckles but it's uncertain if it is homozygous dominant (**FF**) or heterozygous (**Ff**). The pet frog is crossed with a homozygous recessive smooth (non-freckled) frog (**ff**). Half of the offspring are freckled frogs and half are smooth.

Option 1: FF x ff

Option 2: Ff x ff

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From the results described in the problem, what is the genotype of the lab assistant's frog? Explain your reasoning.-

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