Directions: Complete the following Punnett Squares. Be sure that you include the ratios of the

genotypes (and the words used to describe those alleles) and phenotypes of the characteristics.

Scoring: Each problem is worth 3points; 1point each for the genotypes, 1point for the

phenotypes, and 1 point for the Punnett square. Half points may be earned for partially correct

information, so don’t leave any blanks!

1. B= Brown eyes b= blue eyes Mom = Bb Dad = BB

What are the eye color possibilities if they chose to have children?

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |

|  |  |
| --- | --- |
| Genotypes: |  |
| Phenotypes: |  |

1. Curly hair is recessive, and straight hair is dominant. A woman with curly hair marries a man who is homozygous dominant for straight hair. Predict the outcomes for their children.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |

|  |  |
| --- | --- |
| Genotypes: |  |
| Phenotypes: |  |

1. Black hair is homozygous dominant. Brown hair is heterozygous. Blonde hair is homozygous recessive. (This is an example of incomplete dominance.) A woman with brown hair marries a man with brown hair. What are the possible outcomes for their kids?

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |

|  |  |
| --- | --- |
| Genotypes: |  |
| Phenotypes: |  |

1. Attached earlobes are dominant over free hanging earlobes. Complete the Punnett square for the following individuals: Mom=BB and Dad=bb

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |

|  |  |
| --- | --- |
| Genotypes: |  |
| Phenotypes: |  |

1. Incomplete dominance problem T=tall (5’11”-6’2”); Tt=medium height (5’4”-5’10”); t=short height (5’3” or smaller)

Mom = 5’5” and Dad= 6’0”

What are the possible height outcomes of their children?

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |

|  |  |
| --- | --- |
| Genotypes: |  |
| Phenotypes: |  |

1. Freckles are recessive. No freckles are dominant. Mom = heterozygous, Dad = homozygous recessive. What are the possible outcomes for their kids?

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |

|  |  |
| --- | --- |
| Genotypes: |  |
| Phenotypes: |  |