Genetics Crosses with Multiple Genes - Practice Set 3

Consider the following traits in a species of hypothetical rodents:

Short Tails (T) vs long tails (t)
Round ears (R) vs pointed ears (r)
Black eyes (B) vs red eyes (b)
Hairy tails (H) vs bald tails (h)

Express each answer as a fraction.

1. A short tailed (Tt) pointed ears (rr) mouse is crossed with one that is heterozygous for both traits.

   How many of the offspring will have short tails and round ears? _____

2. A black eyed (BB) mouse with a hairy tail (Hh) is crossed with one that is recessive for both traits.

   How many of the offspring will have black eyes and hairy tails? _____

3. A pointed ear (rr) , red eyed (bb) mouse is crossed with one that is heterozygous for both traits.

   How many of the offspring will have pointed ears and red eyes? _____

4, A mouse with a long, bald tail is crossed with one that has a short, hairy tail (HhTt).

   How many of the offspring will have long, bald tails? _____

5. A TtRrbb mouse is crossed with one that is TtrrBB. What are the phenotypic ratios of the offspring?

6. A TTRRBBHh mous is crossed with a ttrrbbHH mouse. What are the phenotypic ratios of the offspring?