1. In cattle, the hornless condition (H) is dominant and the horned condition (h) is recessive. A bull without horns is crossed with a cow with horns. Of the four offspring, one (1) is horned and three (3) are hornless. Determine the genotype of the bull and the cow.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (bull) X \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (cow)

1. In humans, widow's peak (W) is dominant over a continuous hairline (w), and short fingers (F) are dominant over long fingers (f). What are all the possible gamete genotypes for an individual with the genotype WwFf?

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1. The individual from Question 2 has a **homozygous / heterozygous** genotype for widow’s peak (**circle one**).
2. In humans, hemophilia is a sex-linked condition and normal blood clotting (H) is dominant to the condition of hemophilia (h). A woman with hemophilia marries a normal man. What are the probabilities of them having children with hemophilia and their sexes?

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1. Humans can have one of four possible blood types: O, A, B. and AB. The A allele is codominant to the B allele; both A and B are dominant to the O allele. A man has type AB blood and his wife has type O blood. Is it possible for them to have a child with O blood?

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1. What does it mean if a trait is considered “polygenic”? Give TWO examples of polygenic traits in humans:
2. In a new breed of dog, curly fur (F) is incompletely dominant over straight fur (f). When a purebred curly dog is mated with a purebred straight fur dog, all the puppies have wavy fur. What is the genotype ratio and the phenotype ratio of the puppies when two wavy dogs are mated?

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