The original problem is stated below. Let's start by finding the number of sheep. The number of sheep is twice a prime number but must be less than or equal to 23. Doubling all the small primes gives 4, 6, 10, 14, and 22. One less than this number must be prime which rules out 10 and 22. One more than the number must be composite (not prime) which rules out 4 and 6, so there must be 14 sheep. Sheep are ovines and alpacas and llamas are camelids so we know there are 3 alpacas and llamas. Since there are twice as many alpacas as llamas, there must be 2 alpacas and 1 llama. These 17 animals have 68 legs so the remaining 6 animals must have 16 legs. Each animal must have at least two legs so this uses up 12 legs. Thus there are 4 legs to go. This means there are 2 4-legged animals and 4 2-legged animals. Thus there are 2 cows and 4 peafowl. (By the way: a peacock is a male peafowl and a peahen is a female peafowl.)

A Live Problem

One day there were 5 species of animals in my pasture: alpacas, llamas, cows, sheep, and peafowl. There were 23 animals with a total of 84 legs. There were 17 ovines and camelids. The number of sheep is twice a prime number, but if I don't count the one baby lamb the number of sheep is prime. If I have one more lamb, the number of sheep will still be composite. There

were twice as many alpacas as llamas. Find the number of animals of each species in the pasture. Note: each animal has the proper number of legs for its species.