Since the Math Kangaroo is coming up in March, we will be solving Math Kangaroo problems for homework. Each week, I will give two Math Kangaroo problems that have showed up previously on real exams. Please solve each problem and provide complete solutions (this means showing your work, writing a short explanation for each step, and putting a box around your final answer). These problems will be collected at the beginning of each class.

Math Kangaroo 2007 # 24
Andrea needs an hour to get to the shopping center. If she leaves at 4 PM, she gets there half an hour after the store closes. If she leaves at 8 AM, she gets there half an hour before the store opens. What are the shopping center hours?
Math Kangaroo 2008 #17
There are equal numbers of cats, dogs, and chickens in the yard. Together, they have 50 legs. How many cats are there in the yard?