

Due December 1, 2010, at the **beginning of section**

1. Ever since Lou Gehrig developed amyotrophic lateral sclerosis (ALS), this deadly condition has been commonly known as Lou Gehrig's disease. Some believe that ALS is more likely to strike athletes, or the very fit. Columbia University neurologist Lewis P. Rowland recorded personal histories of 431 athletes that he examined between 1992 and 2002. He diagnosed 280 as having ALS; 38% of them had been varsity athletes. The other 151 had other neurological disorders, and only 26% of them had been varsity athletes (*Science News*, Sept 28, 2002). Is there evidence that ALS is more common among athletes?
2. The National Perinatal Statistics Unit of the Sydney Children's Hospital reports that the average birth weight of all babies born in Australia in a particular year was 3360 grams - about 7.4 pounds, with a standard deviation of about 500 grams (1.1 pounds). A Missouri hospital reports that the average weight of 112 babies born there in the same year was 7.68 pounds, with a standard deviation of 1.31 pounds. If we believe that the Missouri babies fairly represent U.S. newborns, is there any evidence that U.S. babies and Australian babies do not weigh the same amount at birth?
3. Defining statistical significance, a court writes: "Social scientists consider a finding of 2 SEs significant, meaning that there is about 1 chance in 20 that the explanation for the difference could be random." Do you agree or disagree with this interpretation of significance? Explain briefly.