**P 264 problem 54**

**54.** A family is considering a move from a midwestern

city to a city in California. The distribution of housing

costs where the family currently lives is normal, with

mean $105,000 and standard deviation $18,200. The

distribution of housing costs in the California city is

normal with mean $235,000 and standard deviation

$30,400. The family’s current house is valued at

$110,000.

**a.** What percentage of houses in the family’s current

city cost less than theirs?

**b.** If the family buys a $200,000 house in the new

city, what percentage of houses there will cost less

than theirs?

**c.** What price house will the family need to buy to be

in the same percentile (of housing costs) in the new

city as they are in the current city?