Homework Day 5 Answers:

14. Unusual steers?

A steer weighing 1000 pounds is more unusual. Its z-score of -1.81 is further from 0 than the 1250 pound steer's z-score of 1.17.

15. Unusual cars?

A car going 10 mph would be more unusual. Its z-score of -3.89 is further from 0 than the 34 mph car's z-score of 2.85.

16. Temperatures.

In January, with mean temperature 36° and standard deviation in temperature 10°, a high temperature of 55° is almost 2 standard deviations above the mean. In July, with mean temperature 74° and standard deviation 8°, a high temperature of 55° is more than two standard deviations below the mean. A high temperature of 55° is less likely to happen in July, when 55° is farther away from the mean.

17. Placement Exams.

On the French exam, the mean was 72 and the standard deviation was 8. The student's score of 82 was 10 points, or 1.25 standard deviations, above the mean. On the math exam, the mean was 68 and the standard deviation was 12. The student's score of 86 was 18 points or 1.5 standard deviations above the mean. The student did better on the math exam.

cise 7 were traveling at a mean speed of 23.84 mph, with a standard deviation of 3.56 mph. One car's z-score was +3.2. How fast was that one going?

14. **Unusual steers?** Suppose a Normal model is useful for describing weights of the yearling Angus steers in Exercise 6. Remember, the mean and standard deviation of the weights were 1152 lbs and 84 lbs. Which would be more unusual, a steer weighing 1000 pounds or one weighing 1250 pounds?

15. **Unusual cars?** Suppose a Normal model is useful for describing speeds of Stanford cars in Exercise 7. Remember, the mean and standard deviation of the speeds were 23.84 mph and 3.56 mph. Which would be more unusual, a car traveling 34 mph or one going 10 mph?

16. **Temperatures** A town's January high temperatures average 36°F with a standard deviation of 10°, while in July the mean high temperature is 74° and the standard deviation is 8°. In which month is it more unusual to have a day with a high temperature of 55°? Explain.

17. **Placement exams** An incoming freshman took her college's placement exams in French and mathematics. In French, she scored 82 and in math 86. The overall results on the French exam had a mean of 72 and a standard deviation of 8, while the mean math score was 68, with a standard deviation of 12. On which exam did she do better compared with the other freshmen?

QUIZ