Data point to Firestone tires made at Illinois factory

Five days after Bridgestone/Firestone voluntarily recalled at least 6.5 million tires, its biggest customer has released new details showing why one tire size – and one plant’s output – are under scrutiny.

Ford Motor’s analysis of Firestone customers’ complaints about the Firestone tires – many installed as original equipment on Ford sport-utility vehicles and pickups – provided the basis for Firestone’s decision to voluntarily recall Wilderness AT tires made in Decatur, Ill., and ATX and ATX II tires. Only P235/75R-15 tires in the three lines are affected. The analysis shows:

- Of 2,504 customer claims under Firestone tire warranties over the past nine years, 2,030, or 81%, involved P235/75R-15 tires.
- Tread-separation complaints for the P235/75R-15 Wilderness tires are highest by far for those made in Decatur in 1996. Firestone received 10 times more complaints about the tires made in Decatur that year than it did for the same size and model made at all other plants.

The complaint rate fell by half for tires made there in 1997 and much lower the next two years.

“These numbers clearly point to Decatur,” says Ford spokesman Jason Vines.

(a) Is this study an experiment? Explain briefly.

(b) What is(are) the response variable(s)? What is(are) the explanatory variable(s)?

(c) What information backs Ford’s claims that only P235/75R-15 tires are affected and that the Decatur, Ill. plant is the problem.
4. The article below is excerpted verbatim from a USA TODAY story by Donna Leinwand that appeared on August 14, 2000.

**Study: Acupuncture cuts cocaine cravings**

The ancient Chinese therapy of acupuncture can help cocaine addicts control their cravings when it is combined with more modern treatments, says a new study in the Archives of Internal Medicine.

In the study of 82 addicts, one group received eight weeks of treatment in which an acupuncturist inserted needles into four specific points on the outer ear where stimulation is believed to have a therapeutic effect. Another group received acupuncture to points on the ear that are not thought to have any treatment effect. A control group watched relaxation videos.

Slightly more than half the addicts who received the specific acupuncture tested free of cocaine in the last week of treatment, compared with 23.5% of the other acupuncture group and 9% of the group that watched the tape.

Participants were addicted to cocaine and heroin. In addition to the acupuncture, they received counseling and methadone for heroin addiction. About a third of those enrolled in the study dropped out before completing treatment.

(a) Is this study an experiment? Explain briefly.
(b) What is the response variable?
(c) What is the explanatory variable?
(d) What treatments are compared?
(e) What important information about the design of the study appears in the article?
(f) Is any important information omitted? If so, what?
(g) Based on a combination of the information in the article and your knowledge of sound study design, make an outline that shows how you think the study was designed. Hint: Look at pages 190-191 in the text

5. The following is excerpted verbatim from a package of COLD-EEZE®.

**CLINICALLY PROVEN COLD-EEZE® WITH ZIGG™**

The following studies apply only to Cold-EEZE® with Zigg™ (Zinc Gluconate Glycine), the only great tasting lozenge proven effective in treating a Common Cold.

A randomized, double-blind placebo study, with 23mg of ionic zinc in a citrus flavored lozenge, concluded that treatment of a cold with our Patented formula within 48 hours of the onset resulted in symptom relief and a 42% reduction in the duration of the common cold.

(a) What is a “randomized, double-blind placebo study”?
(b) What important piece of information is missing from the description of the study?
(c) Construct a diagram, like the one on pages 190-191 in your text depicting the Cold-EEZE® study.
(d) What does the phrase “Resulted in a 42% reduction in the duration of common cold symptoms.” mean?