Multiple Regression handout \( \text{(Ozone pollution)} \)
(two pages, two sheets, pages 195-202 reduced)

1. What does `pairs()` do?
2. What is it used for or used to look at?
   \( \text{pairs(ozone, pollution, panel=panel.smooth)} \)
   - page 195 of handout

3. `par(mfrow = c(1,2))` two plots side by side in
   \( \text{par(mfrow = c(2,2))} \) four plots in \( 2 \times 2 \) array
   - page 196

4. What does the acronym GAM stand for?
   - page 196

5. "It is well to remember the following truths about models."

   all models

   some models

   the correct model

   the simpler the model

   page 119

6. Generalized Additive Models

   There are several ways that we can improve things if it turns out that
   our present model is inadequate. It
   - be able to list 3 of the 6 - any 3 -
6. What does `par(mfrow = c(1,1))` do?

7. Be able to interpret the free model output from R. (See page 197 and 198)

8. What is the `I` function for in R?
   - `I()` stands for "as is" and it overrides R interpreting a model symbol as an operator, as a formula operator.
   - See page 198

```
model1 <- I(rad^2) + I(temp^2) + I(wind^2)
```

9. What is the syntax in R for update() function? (p. 198-200)

```
model5 <- update(model4 ~ . - I(rad^2))
```
What is there already
\texttt{tildel dot} or \texttt{tildel period} \texttt{\textasciicircum}

\texttt{\textminus} (minus) indicates deletion of an explanatory variable from the model

\texttt{model2 <- update(model1, \textminus texpionivdelred)}

---

Why was a log transformation done on the ozone response variable?

See \texttt{plot(model6)} output (page 199-200)

Bad News \#1:

Bad News \#2:

How do you tell from the plots the bad news (or not)?

What is the syntax for log transform of a response variable like ozone?