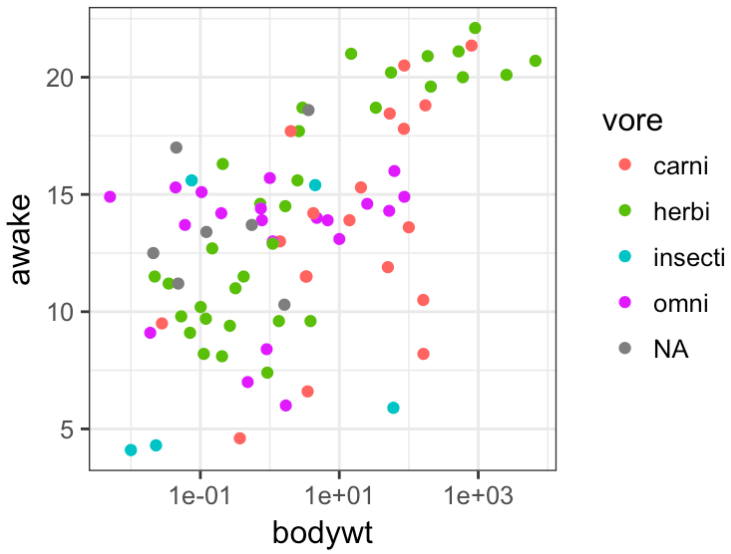
# Lab Worksheet 2

We will be working with the `msleep` data set that is provided with ggplot2. The data set contains information about the sleep habits of 83 mammals. Enter `?msleep` on the R command line to learn more about the dataset.

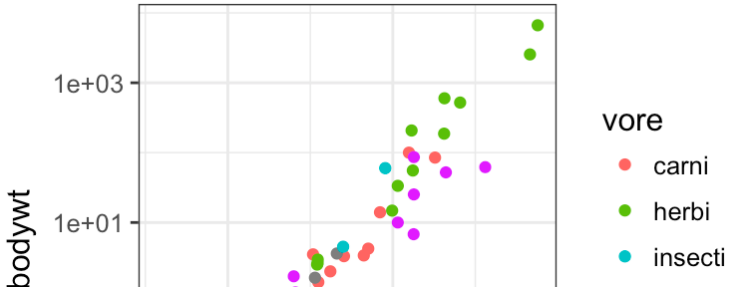
**Problem 1:** Make the following plots: (i) a plot of total time awake vs. body weight, colored by "vore" (carnivore, herbivore, etc.); (ii) a plot of body weight vs. brain weight, colored by "vore". When you plot body weight and/or brain weight, consider whether a linear scale or a logarithmic scale seems more appropriate, and explain your reasoning in 1-2 sentences. **HINT:** Use the functions `scale_x_log10()` and `scale_y_log10()` to change the scales.

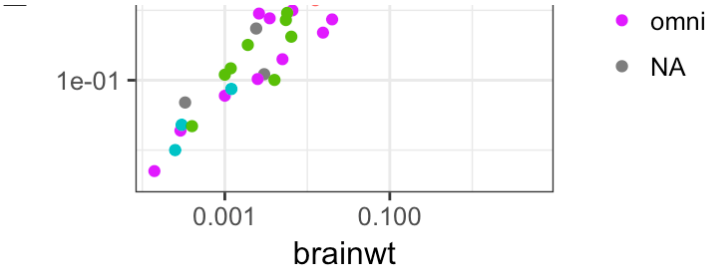
```
ggplot(msleep, aes(x=bodywt, y=awake, color=vore)) + geom_point() + scale_x_log
10()
```




```
ggplot(msleep, aes(x=brainwt, y=bodywt, color=vore)) + geom_point() + scale_x_l
og10() + scale_y_log10()
```

```
## Warning: Removed 27 rows containing missing values (geom_point).
```



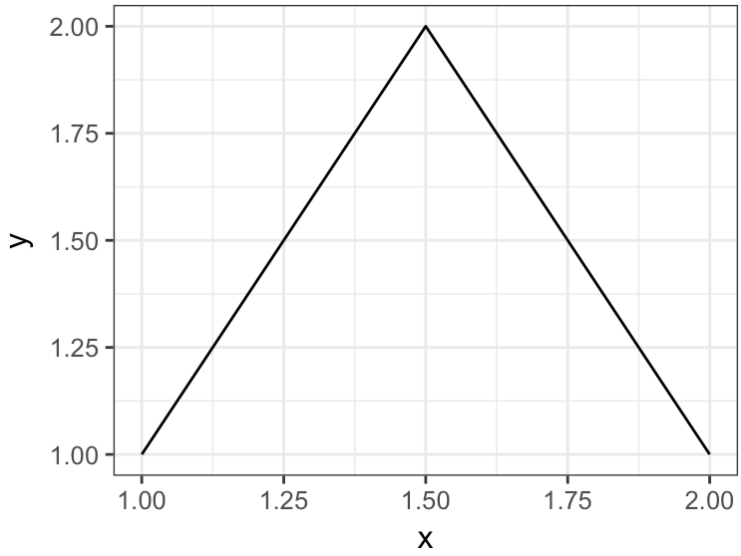



Log scales are more appropriate for both body weight and brain weight because there are a few species that have much larger values than most other species. If we were to use a linear scale, these outlying species would require axis ranges that are too wide to resolve any details for the majority of the species.

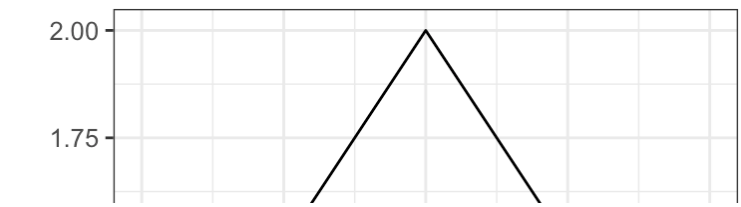
**Problem 2:** Explain the difference between `geom_line()` and `geom_path()`. Make up a simple data set (5-10 data points), plot it twice, once using `geom_line()` and once using `geom_path()`, and explain why each plot looks the way it does.

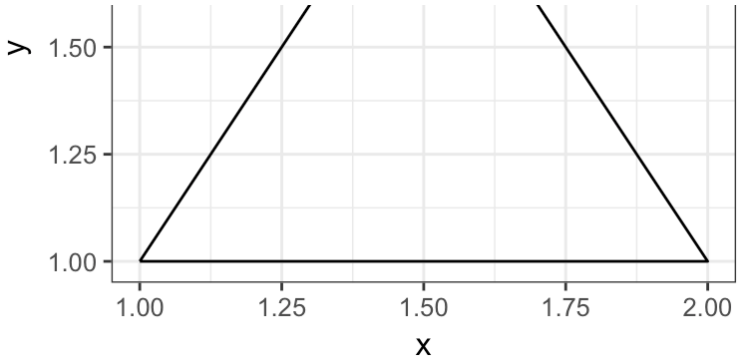
`geom_line()` connects data points in the order from smallest to largest x value. `geom_path()`, by contrast, connects data points in the order in which they appear in the data frame. The following data set produces an open triangle with `geom_line()` and a closed triangle with `geom_path()`.

```
d <- data.frame(x=c(1, 2, 1.5, 1), y=c(1, 1, 2, 1))
ggplot(d, aes(x=x, y=y)) + geom_line()
```




```
ggplot(d, aes(x=x, y=y)) + geom_path()
```




y
1.50
1.25
1.00
1.00
1.25
1.50
1.75
2.00
x