1. Use `filter()` to remove all `NA` values from the `weight` column. Use `head()` to print the first few rows of your new object.

```
##   record_id month day year plot_id species_id sex hindfoot_length weight
## 1        63     8  19 1977       3         DM   M              35     40
## 2        64     8  19 1977       7         DM   M              37     48
## 3        65     8  19 1977       4         DM   F              34     29
## 4        66     8  19 1977       4         DM   F              35     46
## 5        67     8  19 1977       7         DM   M              35     36
## 6        68     8  19 1977       8         DO   F              32     52
```

2. Use `unite()` to make a new column called `date_plot` which combines the `year`, `month`, `day`, and `plot_id` columns. Use `head()` to print out the first few rows of this object.

```
##   record_id   date_plot species_id sex hindfoot_length weight
## 1        63 1977_8_19_3         DM   M              35     40
## 2        64 1977_8_19_7         DM   M              37     48
## 3        65 1977_8_19_4         DM   F              34     29
## 4        66 1977_8_19_4         DM   F              35     46
## 5        67 1977_8_19_7         DM   M              35     36
## 6        68 1977_8_19_8         DO   F              32     52
```

3. Group your data by `date_plot` and `species_id` and summarize the mean `weight` for each group. Use `head()` to print out the first few rows of this object.

```
## `summarise()` has grouped output by 'date_plot'. You can override using
## the `.groups` argument.
```

```
## # A tibble: 6 x 3
## # Groups:   date_plot [5]
##   date_plot     species_id mean_weight
##   <chr>         <chr>            <dbl>
## 1 1977_10_16_1  DM                43.7
## 2 1977_10_16_13 DM                44.3
## 3 1977_10_16_18 DM                44.3
## 4 1977_10_16_2  DM                46.2
## 5 1977_10_16_2  OL                21
## 6 1977_10_16_20 DM                41
```

4. Use `pivot_wider` to make a new data object with `species_id` in the columns and `weight` in the cells. Use `head()` to print out the first few rows of this object.

```
## `summarise()` has grouped output by 'date_plot'. You can override using
## the `.groups` argument.
```

```
## # A tibble: 6 x 26
## # Groups:   date_plot [6]
##   date_plot        DM    OL    PE    OT    DO    RM    PF    DS    OX    PP
##   <chr>         <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
## 1 1977_10_16_1   43.7    NA    NA    NA    NA    NA    NA    NA    NA    NA
## 2 1977_10_16_13  44.3    NA    NA    NA    NA    NA    NA    NA    NA    NA
## 3 1977_10_16_18  44.3    NA    NA    NA    NA    NA    NA    NA    NA    NA
```

```
## 4 1977_10_16_2   46.2    21    NA    NA    NA    NA    NA    NA    NA    NA
## 5 1977_10_16_20  41      NA    20    NA    NA    NA    NA    NA    NA    NA
## 6 1977_10_16_22  39      NA    NA    21    NA    NA    NA    NA    NA    NA
## # i 15 more variables: SH <dbl>, NL <dbl>, PM <dbl>, SS <dbl>, RF <dbl>,
## #   PH <dbl>, SF <dbl>, BA <dbl>, SO <dbl>, RO <dbl>, PI <dbl>, PB <dbl>,
## #   PL <dbl>, RX <dbl>, PX <dbl>
```

5. Begin a new data pipeline using the original `surveys` data object. Use `filter()` to remove all `NA` values from weight, keep only the `DM` species, and remove all empty values (i.e., `""`) of `sex`. Use `head()` to print out the first few rows of this object.

```
##   record_id month day year plot_id species_id sex hindfoot_length weight
## 1        63     8  19 1977       3         DM   M              35     40
## 2        64     8  19 1977       7         DM   M              37     48
## 3        65     8  19 1977       4         DM   F              34     29
## 4        66     8  19 1977       4         DM   F              35     46
## 5        67     8  19 1977       7         DM   M              35     36
## 6        71     8  19 1977       7         DM   F              36     35
```

6. `unite()` the `species_id` and `sex` column into a new `sp_sex` column. Use `head()` to print out the first few rows of this object.

```
##   record_id month day year plot_id sp_sex hindfoot_length weight
## 1        63     8  19 1977       3   DM_M              35     40
## 2        64     8  19 1977       7   DM_M              37     48
## 3        65     8  19 1977       4   DM_F              34     29
## 4        66     8  19 1977       4   DM_F              35     46
## 5        67     8  19 1977       7   DM_M              35     36
## 6        71     8  19 1977       7   DM_F              36     35
```

7. Group the data by `year` and `sp_sex` to calculate the mean weight. Use `head()` to print out the first few rows of this object.

```
## `summarise()` has grouped output by 'year'. You can override using the
## `.groups` argument.
```

```
## # A tibble: 6 x 3
## # Groups:   year [3]
##    year sp_sex mean_weight
##   <int> <chr>        <dbl>
## 1  1977 DM_F          40.2
## 2  1977 DM_M          41.8
## 3  1978 DM_F          39.8
## 4  1978 DM_M          41.8
## 5  1979 DM_F          42.6
## 6  1979 DM_M          44.3
```

8. Starting with your summarized data, `separate()` `sp_sex` into a `species` and `sex` column and then use `ggplot()` to make a scatter graph of mean weight by year, and color the points ac-

cording to `sex`. Also add linear regression lines to your plot, one for males and one for females.