Module "4": Assignment 1 Answer Key

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3.

```
##   homo_sapien canis_familiaris felis_catus canis_latrans
## 1           3                0           0            18
## 2          10                5           1           103
## 3          47                2           1            21
## 4          28               10           0            41
## 5         114               16           0            40
## 6          14                0           2             2
##   geococcyx_californianus pecari_tajacu spermophilus_tereticaudus
## 1                       0             0                         0
## 2                       3             2                         0
## 3                       1             2                         0
## 4                       0             0                         0
## 5                       8             4                         0
## 6                       0            10                         0
##   sylvilagus_audubonii lepus_californicus haemorhous_mexicanus lynx_rufus
## 1                   47                  3                    0         0
## 2                   77                  0                    0         0
## 3                   48                  0                    0         0
## 4                    6                  0                    0         0
## 5                   55                  0                    2         2
## 6                   67                  0                    0         4
##   procyon_lotor equs_caballus pipilo_aberti otospermophilus_variegatus
## 1             0             0             0                          0
## 2             0             0             0                          0
## 3             0             1             0                          0
## 4             0             3             0                          0
## 5             2             0             0                          0
## 6             0             0             8                         32
##   spilogale_putorius butorides_virescens zonotrichia_leucophrys ardea_herodias
## 1                  0                   0                      0             0
## 2                  0                   0                      0             0
## 3                  0                   0                      0             0
## 4                  0                   0                      0             0
## 5                  0                   1                      0             0
## 6                  0                   0                      2             0
##   anas_platyrhynchos sayornis_nigricans accipiter_cooperii neotoma_sp
## 1                  0                  0                  0         0
## 2                  0                  0                  0         0
## 3                  0                  0                  0         0
## 4                  0                  0                  0         0
```

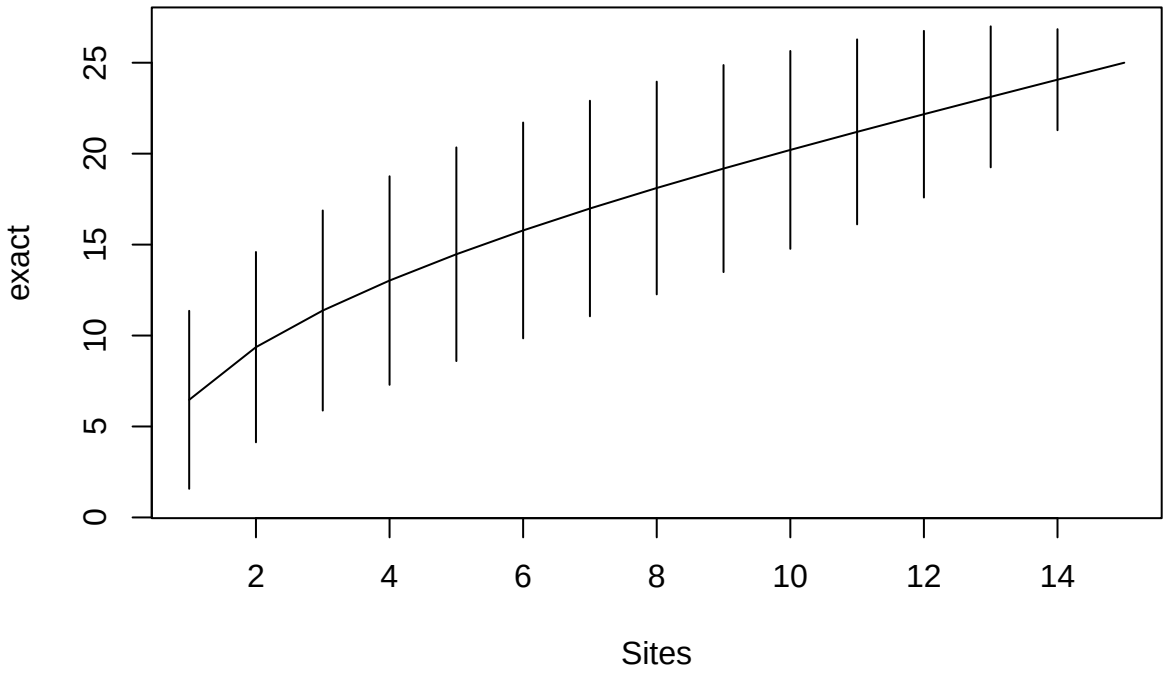
```
## 5                  0                  0                  0          0
## 6                  0                  1                  0          1
##   junco_hyemalis campylorhynchus_brunneicapillus
## 1              0                               0
## 2              0                               0
## 3              0                               0
## 4              0                               0
## 5              0                               0
## 6              1                               0
```

5.

```
## Warning in cor(x > 0): the standard deviation is zero
```

```
## Species Accumulation Curve
## Accumulation method: exact
## Call: specaccum(comm = scr)
##
##
## Sites    1.000000 2.000000  3.000000  4.000000  5.000000  6.000000  7.000000
## Richness 6.466667 9.361905 11.375824 13.024176 14.470529 15.778821 16.984149
## sd       2.445858 2.615566  2.749919  2.866508  2.936565  2.966045  2.962647
##
## Sites     8.000000  9.000000 10.000000 11.000000 12.000000 13.000000 14.000000
## Richness 18.111422 19.180020 20.205128 21.198535 22.169231 23.123810 24.066667
## sd        2.923536  2.845109  2.719706  2.542279  2.290225  1.937607  1.388844
##
## Sites    15
## Richness 25
## sd        0
```

6.



7.

```
##     Species     chao  chao.se    jack1 jack1.se    jack2     boot boot.se  n
## All      25 116.4667 104.1535 38.06667 6.191033 49.39524 30.15487  2.9969 15
```

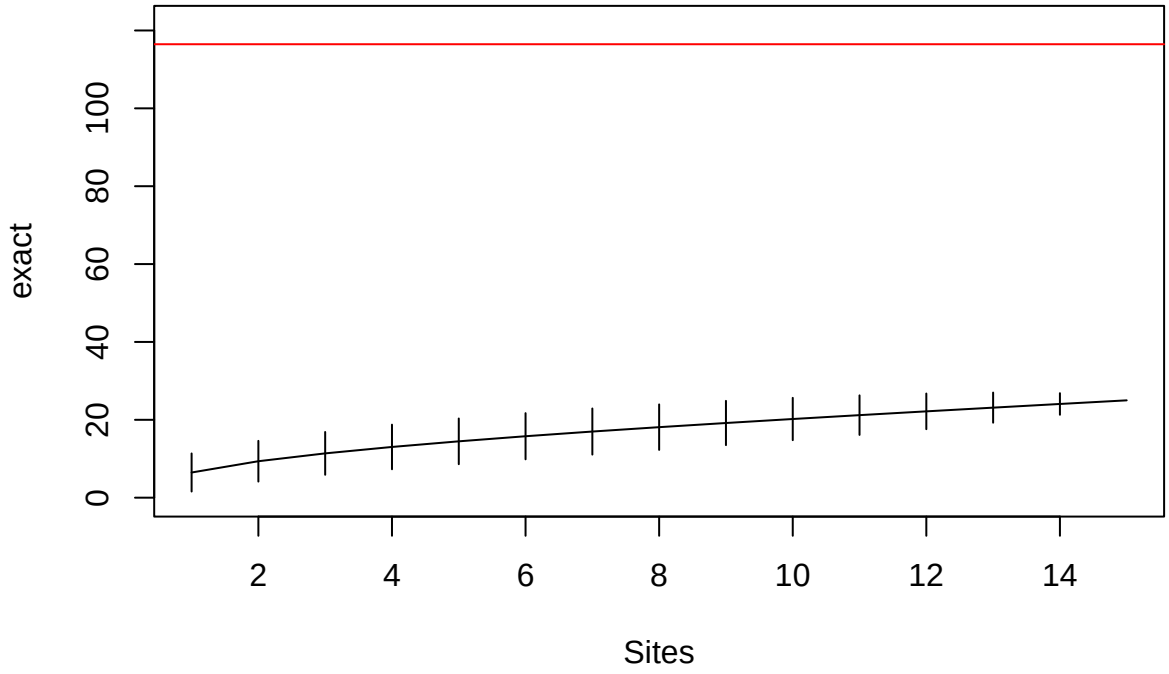
8.

```
## [1] 25
```

```
## [1] 116.4667
```

9.

```
## [1] 91.46667
```



10.

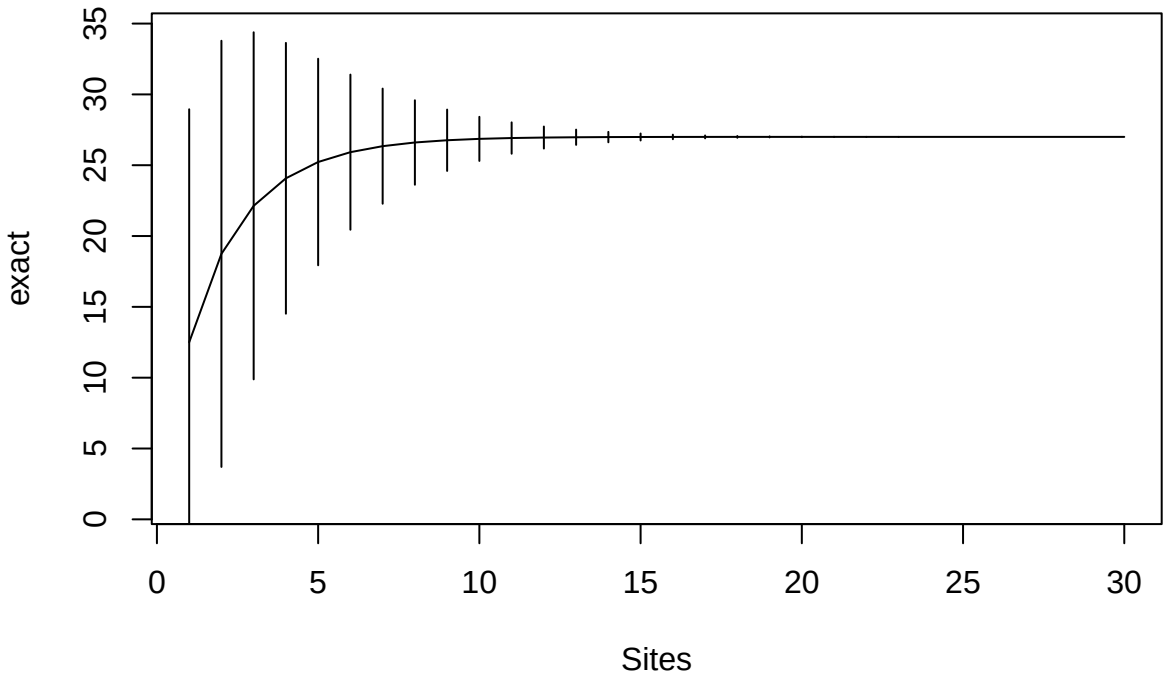
11.

```
##   CHA TRU VAI LOC OMB BLA HOT TOX VAN CHE BAR SPI GOU BRO PER BOU PSO ROT CAR
## 1   0   3   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
## 2   0   5   4   3   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
## 3   0   5   5   5   0   0   0   0   0   0   0   0   0   1   0   0   0   0   0
## 4   0   4   5   5   0   0   0   0   0   1   0   0   1   2   2   0   0   0   0
## 5   0   2   3   2   0   0   0   0   5   2   0   0   2   4   4   0   0   2   0
## 6   0   3   4   5   0   0   0   0   1   2   0   0   1   1   1   0   0   0   0
##   TAN BCO PCH GRE GAR BBO ABL ANG
## 1   0   0   0   0   0   0   0   0
## 2   0   0   0   0   0   0   0   0
## 3   0   0   0   0   0   0   0   0
## 4   1   0   0   0   0   0   0   0
## 5   3   0   0   0   5   0   0   0
## 6   2   0   0   0   1   0   0   0
```

14.

```
## Species Accumulation Curve
## Accumulation method: exact
## Call: specaccum(comm = fish)
##
##
## Sites     1.000000  2.000000  3.000000  4.000000  5.000000  6.000000  7.000000
## Richness 12.500000 18.742529 22.133498 24.076665 25.226910 25.921113 26.344608
## sd        8.224962  7.521837  6.125741  4.780134  3.645886  2.738364  2.032045
##
## Sites     8.000000  9.000000 10.000000 11.000000 12.000000 13.000000 14.000000
## Richness 26.604116 26.763081 26.860035 26.918697 26.953776 26.974418 26.986307
## sd        1.491678  1.083656  0.778985  0.553784  0.388989  0.269569  0.183966
##
## Sites    15.000000 16.00000 17.000000 18.000000 19.000000 20.000000 21.000000
## Richness 26.992969 26.99657 26.998432 26.999339 26.999749 26.999917 26.999978
## sd        0.123247  0.08070  0.051322  0.031424  0.018253  0.009885  0.004868
##
## Sites    22.000000 2.30e+01 24 25 26 27 28 29 30
## Richness 26.999996 2.70e+01 27 27 27 27 27 27 27
## sd        0.002031 7.01e-04  0  0  0  0  0  0  0
```

15.



16.

```
##     Species chao chao.se jack1 jack1.se jack2     boot    boot.se  n
## All      27   27       0    27        0    27 27.00065 0.02849795 30
```

17.

```
## [1] 27
```

```
## [1] 27
```

18.

```
## [1] 0
```

19.