Plug in variables in this order:

num\_pats ~ time\_outdoors + weight + height + loudness + + C(coat\_colour) + C(is\_longhaired)

**For Cat with coat-color = 1, is\_longhaired = 0**

Num pats = 5.5037 + 1.0368 \* time outdoors + 0.9095 \* weight + 0.8008 \* height + 0.2301\* loudness + -0.2826 \* coat\_length + 0 (this is zero because its our base category) + 0 (this is zero because its our base category)

**For Cat with coat color =1, longhaired = 1:**

Num pats = 5.5037 + 1.0368 \* time outdoors + 0.9095 \* weight + 0.8008 \* height + 0.2301\* loudness + -0.2826 \* coat\_length + 0 (this is zero because coat colour is still our base category) + -8.7843 \* 1 (this is now 1 because longhaired = 1 so we must REDUCE

num pats because long haired cats get less pats on average)

**For Cat with coat-color = 2, is\_longhaired = 0**

Num pats = 5.5037 + 1.0368 \* time outdoors + 0.9095 \* weight + 0.8008 \* height + 0.2301\* loudness + -0.2826 \* coat\_length + 2.7279 \* 1 (this is now 1 because coat colour = 2 so we must INCREASE num pats because this color of cats gets more pats than our base colour of cat) + 0 (this is zero because we are on our base category for long-haired)

**For Cat with coat-color = 3 is\_longhaired = 1**

Num pats = 5.5037 + 1.0368 \* time outdoors + 0.9095 \* weight + 0.8008 \* height + 0.2301\* loudness + -0.2826 \* coat\_length + 8.3677\* 1 (this is now 1 because coat colour = 3 so we must INCREASE num pats because cats of this colour get more pats than our base colour cat) + -8.7843 \* 1 (this is now 1 so we must REDUCE our num pats because longhaired cats get less pats on average)

* Order of the calculation doesn’t matter at all
* Order of the categories will change the coefficients on the categorical variables to make them relevant to the new base category, and **might** change the other coefficients if there is an interaction between your base category and the other variables