P8110 Homework 5

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```
data hw5;
    infile "C:\Users\niwi8\OneDrive\Documents\fall_2018\regression\homework\p8110_hw5\HW5data.csv"
        delimiter= ',' missover dsd;
    input id len_follow final_stat mi_ord bmi year age_c;
run;
```

Problem 1

```
proc phreg data = hw5;
    class mi_ord (ref = "0") / param = ref;
    model len_follow * final_stat(0) = mi_ord / risklimits covb ties = efron;
    title "Cox model, length of follow-up as a function of MI order";
run;
```

Problem 2

```
proc phreg data = hw5;
    class mi_ord (ref = "0")
          age_c (ref = "1")
          year (ref = "1") / param = ref;
    model len_follow * final_stat(0) = mi_ord age_c bmi year
          / risklimits covb ties = efron;
    title "Cox model, length of follow-up as a function of MI order,
           age category, bmi, and cohort year";
run;
```

Problem 3

```
proc phreg data = hw5;
    class mi_ord (ref = "0")
          age_c (ref = "1")
          year (ref = "1") / param = ref;
    model len_follow * final_stat(0) = mi_ord age_c bmi year mi_ord * age_c
          / risklimits covb ties = efron;
    hazardratio mi_ord / at (age_c = "2") diff = all;
    baseline out = model_3 survival = surv lower = lcl upper = ucl;
    title "Cox model, length of follow-up as a function of MI order,
           age category, bmi, cohort year, interaction between
           MI order and age category";
run;
```

Problem 4

```
data surv_pred;
```

```
    input id mi_ord age_c bmi year;
    cards;
    1 1 4 30 3
    ;
run;

proc phreg data = hw5 plots(cl) = survival;
    class mi_ord (ref = "0")
          age_c (ref = "1")
          year (ref = "1") / param = ref;
    model len_follow * final_stat(0) = mi_ord age_c bmi year mi_ord * age_c
          / risklimits covb ties = efron;
    baseline covariates = surv_pred out = pred survival = _all_ / rowid = id;
run;

proc print data = pred;
run;
```