AssignmentC

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Contents

```
data0 <- readRDS("incomplete_data_g1.rds") # load incomoplete
data1 <- readRDS("complete_data.rds")
```

```
data0["weight"] <- I(data0$bmi * (data0$height / 100)^2)
```

```
sex <- as.numeric(data0$sex) - 1
bmi <- data0$bmi
bmiSex <- sex * bmi
data0["bmiSex"] <- bmiSex
```

```
pred <- make.predictorMatrix(data0)
meth <- make.method(data0)

meth["weight"] <- "~ I(bmi  * (height / 100)^2)"
meth["bmiSex"] <- "~ I(bmi*sex)"

pred[c("bmi", "bmiSex", "height"), "weight"] <- 0
pred[c("bmiSex", "sex", "bmi"), c("bmiSex", "sex", "bmi")] <- 0
pred[, "weight"] <- 0
```

```
mincorExample <- quickpred(data0)
pred[c("bmi", "bmiSex", "height"), "weight"] <- 0
pred[c("bmiSex", "sex", "bmi"), c("bmiSex", "sex", "bmi")] <- 0
pred[, "weight"] <- 0
pred["smoke", ] <- 0
pred["smoke", c("intensity", "rest")] <-1
pred["active", ] <- 0
pred["active", c("age", "intensity", "rest")] <- 1
```

```
imp1 <- mice(data0,
             predictorMatrix = mincorExample,
             method = meth,
             maxit = 20,
             m= 30,
             seed = 123,
             print = FALSE)
```

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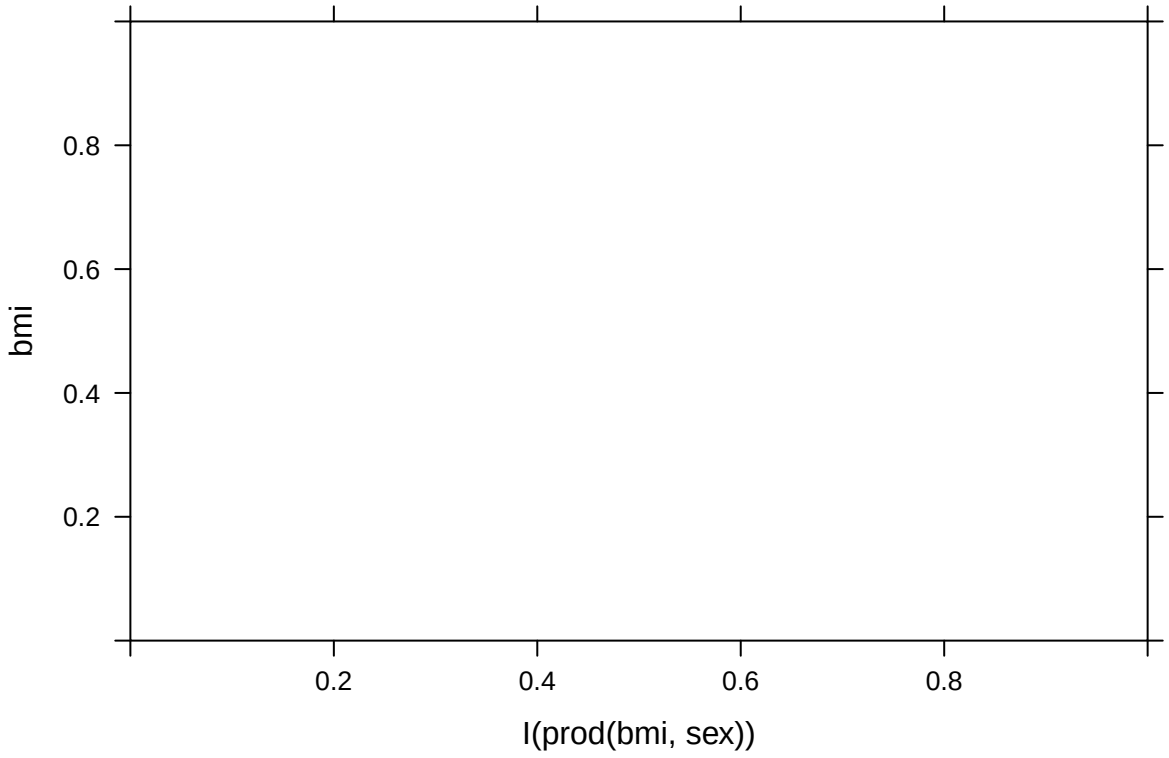
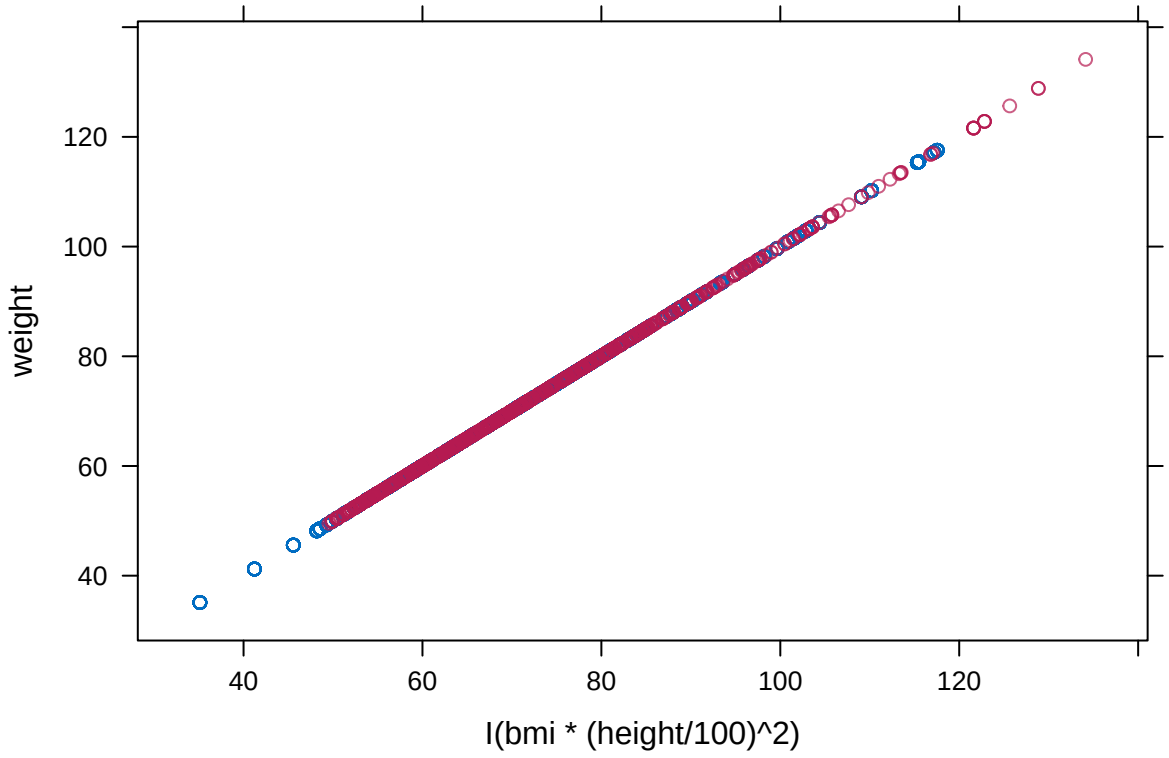
```
xyplot(imp1,
       bmi ~ I(prod(bmi, sex))
      )
```




```
xyplot(imp1,
       weight ~ I(bmi * (height/100)^2))
```




```
fitImp2 <- with(imp1, lm(active ~ age + bmi + sex + smoke + bmiSex))
est2 <- pool(fitImp2)
summary(est2)
```

```
##          term   estimate  std.error  statistic        df      p.value
## 1 (Intercept) 80.8739303 14.3533486  5.6344991  89.26260 2.019830e-07
## 2         age -0.7869524  0.1093838 -7.1944143 117.50618 6.346257e-11
## 3         bmi  1.5601951  0.5475487  2.8494182  88.19552 5.451147e-03
## 4   sexfemale 29.8943103 20.8806355  1.4316763 108.12012 1.551209e-01
## 5    smokeyes  1.9386109  2.6804731  0.7232346 154.72532 4.706277e-01
## 6      bmiSex -1.0096134  0.8895237 -1.1350046 102.55287 2.590192e-01
```

```
est2
```

```
## Class: mipo    m = 30
##          term  m   estimate         ubar            b            t dfcom
## 1 (Intercept) 30 80.8739303 1.370103e+02 6.678221e+01 206.01861699   207
## 2         age 30 -0.7869524 9.042724e-03 2.827832e-03   0.01196482   207
## 3         bmi 30  1.5601951 1.982012e-01 9.833065e-02   0.29980954   207
## 4   sexfemale 30 29.8943103 3.174380e+02 1.147383e+02 436.00093821   207
## 5    smokeyes 30  1.9386109 6.128738e+00 1.022127e+00   7.18493579   207
## 6      bmiSex 30 -1.0096134 5.622820e-01 2.215842e-01   0.79125234   207
##          df       riv    lambda       fmi
## 1  89.26260 0.5036721 0.3349614 0.3493776
## 2 117.50618 0.3231431 0.2442238 0.2567672
```

```
## 3  88.19552 0.5126524 0.3389096 0.3534079
## 4 108.12012 0.3734993 0.2719326 0.2850368
## 5 154.72532 0.1723352 0.1470017 0.1578179
## 6 102.55287 0.4072162 0.2893771 0.3028419
```