Math 4939 Feb. 24, 2021

Consider the following models for a response Y and predictors X and Z.

1) Draw a confidence ellipse for the coefficients of the multiple regression that is consistent with the output, explaining why.
2) Draw a predictor data ellipse that is consistent with the output explaining why.

```
Call: lm(formula = Y ~ Z + X, data = dd)

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)   1.0151     0.1158   8.770 1.45e-06
Z            -0.8360     0.1851  -4.516 0.000706
X            -0.7856     0.1680  -4.676 0.000536
```

```
Call: lm(formula = Y ~ X, data = dd)

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)   1.2596     0.1615   7.799 2.95e-06
X            -0.1490     0.1443  -1.032    0.321
```

```
Call: lm(formula = Y ~ Z, data = dd)

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)   0.9832     0.1865   5.272 0.000151
Z            -0.1098     0.1626  -0.675 0.511355
```

Quiz 5

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