STA 3180 Statistical Modelling: Regression

1. Start of Code: Write a code to fit a linear regression model using the lm() function in R.

```
lm(y ~ x, data = mydata)
```

End of Code

2. Start of Code: Write a code to fit a polynomial regression model using the poly() function in R.

```
poly(y ~ x, data = mydata, degree = 2)
```

End of Code

3. Start of Code: Write a code to fit a logistic regression model using the glm() function in R.

```
glm(y ~ x, family = binomial(link = "logit"), data = mydata)
```

End of Code

4. Start of Code: Write a code to fit a stepwise regression model using the step() function in R.

```
step(lm(y ~ x, data = mydata))
```

End of Code

5. Start of Code: Write a code to fit a ridge regression model using the glmnet() function in R.

```
glmnet(x, y, alpha = 0, lambda = NULL)
```

End of Code

6. Start of Code: Write a code to fit a lasso regression model using the glmnet() function in R.

```
glmnet(x, y, alpha = 1, lambda = NULL)
```

End of Code

7. Start of Code: Write a code to fit a least absolute shrinkage and selection operator (LASSO) regression model using the lars() function in R.

```
lars(x, y, type = "lasso")
```

End of Code

8. Start of Code: Write a code to fit a partial least squares (PLS) regression model using the pls() function in R.

```
pls(x, y, ncomp = 2)
```

End of Code

9. Start of Code: Write a code to fit a support vector machine (SVM) regression model using the svm() function in R.

```
svm(x, y, type = "eps-regression")
```

End of Code

10. Start of Code: Write a code to fit a multivariate adaptive regression splines (MARS) regression model using the earth() function in R.

```
earth(x, y, degree = 1, nk = 10)
```

End of Code