Assignement_2

B.A (H) Business Economics

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Question 1: Write a function that return `TRUE` if a number is prime, otherwise `FALSE`. (4 marks)

```
is.prime <- function(number) {
  #body of the function
}
```

Question 2: Use the above function to test numbers from 1 to 1000, and create a vector of prime numbers. (1 marks)

Question 3: Use the data in `meap93`. We want to explore the relationship between the math pass rate (math10) and spending per student (expend).

1. Do you think each additional dollar spent has the same effect on the pass rate, or does a diminishing effect seem more appropriate? Explain.
2. In the population model
$$math10 = \beta_0 + \beta_1 log(expend) + u,$$
argue that $\beta_1/10$ is the percentage point change in math10 given a 10% increase in expend.
3. Use the data in `meap93` to estimate the model from part 2. Report the estimated equation in the usual way, including the sample size and R-squared.
4. How big is the estimated spending effect? Namely, if spending increases by 10%, what is the estimated percentage point increase in math10?
5. One might worry that regression analysis can produce fitted values for math10 that are greater than 100. Why is this not much of a worry in this data set? (1*5 = 5 Marks)