# Problem 1

Answer to the problem goes here.

1. Problem 1 part 1 answer here.

Text

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The parameter estimates of and is 0.3954 and 0.7701 respectively. The Bayesian is 0.72.

1. Problem 1 part 2 answer here.

The posterior probability under alternative is 0.9975, and is 0.0025.

The posterior probability under alternative is 0.003, and is 0.997.

1. Problem 1 part 3 answer here

The predicative response has mean value 1.932, with 95% credible interval as [1.112, 2.729].

# Problem 2

Answer to the problem goes here.

Graphical user interface, text, application, chat or text message

Description automatically generated

1. Problem 2 part 1 answer here.

The fitted logistic regression has parameter estimate: *.* The deviance is 39.42.

# Problem 2 part 2 answer here:

The predicted value is 0.8095, with 95% credible sets [0.7467, 0.8839].

# Problem 3

Answer to the problem goes here.

Graphical user interface, text, application

Description automatically generated

1. Problem 3 part 1 answer:

Based on the results, the level of SO2 has negative coefficient -0.001815 with 95% credible sets [5.445, 5.477], and NO2 has positive coefficient 0.002465 with 95% credible sets [0.002179, 0.002817]. The level of SO2 has a negative effect on the hospital admission, but the level of NO2 has a positive effect on the hospital admission.

2.Problem 3 part 2 answer:

The expected number of hospital admissions is 278.3, with 95% credible set [274.5, 282.5].