# NTNU – Trondheim
## Norwegian University of Science and Technology

Department of Mathematical Sciences

# Examination paper for **TMA4315 Generalized Linear Models**

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**Examination date:** December 18, 2014

**Examination time (from–to):** 09:00–13:00

**Permitted examination support material:** C. **NO** written or handwritten examination support materials are permitted. A simple calculator is permitted.

**Other information:**
You may answer this exam in **English**, **Norsk (begge/båe målføre)**, or a mix of these. All answers should be justified.

**Language:** English

**Number of pages:** 1

**Number pages enclosed:** 0

**Checked by:**

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Date          Signature

## Problem 1

There are two main asymptotic results that are behind essentially everything we have done with respect to inference for generalized linear models. These are

1. asymptotic normality of maximum likelihood estimators (MLE), and

2. asymptotic result for likelihood ratio tests (LRT).

**State, describe and discuss the main assumptions behind these two asymptotic results, how these results are used in practice to do inference for parameters, testing various hypotheses and comparing nested models, for logistic regression.**