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MATH 562 Numerical Analysis II
Homework 3

1. Determine the relative condition number for the following problem. Are there values of x for which the problem is ill-conditioned? Justify your answer.

2. Determine whether the calculation $f(x, y) = (1 + x)y^2$ is backward stable by the alogirithm
$$\tilde{f}(x, y) = [1 \oplus fl(x)] \otimes [fl(y) \otimes fl(y)]$$

3.

4.

5.

6.

7.