

HOMEWORK 3

Due Sept 20

1. Find the maximum interval of existence for

$$x' = Ax, \quad x(0) = x_0$$

where A is constant $n \times n$ matrix and x_0 a constant n -vector,

2. Find the maximum interval of existence for

$$x' = x^2, \quad x(0) = 1$$

3. Find the maximum interval of existence for

$$x' = \frac{1}{1-x} \quad x(0) = 0$$

4. Exercise 4 page 20

5. Exercise 5 page 23