MAT385 Quiz 06, Spring 2025

Name:

There are three questions (one on the back).

1. (3 pts) Write a recurrence relation $S(n)$ for the sum of the first n odd natural numbers.

2. (4 pts) Solve this linear, first-order, constant coefficient recurrence relation:

$T(1) = 1$
$T(n) = 2T(n-1) + 1 \quad n \geq 2$

3. (3 pts) Solve this linear, first-order, non-constant coefficient recurrence relation:

$$S(1) = 1$$
$$S(n) = 3(n+1)S(n-1) \quad n \geq 2$$