

MATH 102 – Quiz 1

February 6th

Full name: _____

Student ID: _____

Grade: $[4 + 4 + 2]$

Problem. A sequence is defined by

$$a_1 = \frac{1}{2}, \quad a_{n+1} = \frac{1}{2 - a_n}, \quad n \geq 1.$$

- (a) Show that $0 < a_n < 1$ for all n .
- (b) Prove that the sequence converges.
- (c) Find its limit.