HW8 Corrections (CSCI-C241)

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- Question One
  - R_3 is a partial function, because each member of B is at most related to a single member of B, but $d \in B$, but there exists no member of B that d is related to
- Question Three
  - This is not possible, because in order for a function from $B \to A$ to be one-to-one, no member of B would be related to the same member of A, but in order to be a total function, every member of B must be related to a member of A. This would not be possible because the set B has one more member than the set A
  - $f(x) = |2x|$
- Question 6
  - Claim: a is onto

    Proof.

    Choose $n \in \mathbb{N}$ (1)

    Let $s \in$ `Str` where $s =$ `a string made up of` n `1's` (2)

    Since s contains n digits of 1 and $s \in$ `Str`, we know all the digits add up to n (3)

    Since the digits of s add up to n, we know $a(s) = n$, so a is onto (4)

    □