

CSCI 1311: Quiz 6

9 Mar 2020

Name: _____ email: _____

Question Weighting

Question:	1	2	Total
Points:	6	4	10
Score:			

1. Consider the following sets:

$$A = \{a, b, c, d\}$$

$$B = \{1, 2, 3\}$$

$$C = \{\alpha, \beta, \lambda\}$$

And functions over those sets:

$$f : A \rightarrow B, f = \{(a, 1), (b, 2), (c, 3)\}$$

$$g : A \rightarrow B, g = \{(b, 3), (c, 2), (a, 1), (d, 3)\}$$

$$h : B \rightarrow C, h = \{(1, \alpha), (2, \lambda), (3, \beta)\}$$

(a) [2 points] Is f a well defined function, one-to-one, or onto? Provide a brief explanation.

(b) [2 points] Is g a well defined function, one-to-one, or onto? Provide a brief explanation.

(c) [2 points] Is h a well defined function, one-to-one, or onto? Provide a brief explanation.

2. [4 points] Prove that the following function is onto, or provide a counter example.

$$f : \mathbb{Z} \rightarrow \mathbb{Q}, f(x) = (x + 1)/2$$