

Second Quiz for CSI35

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Do *one* of the following two problems.

1. On the set of real numbers \mathbb{R} consider the relation:

$$R = \{(x, y) : |x - y| \in \mathbb{N}\}$$

- (a) Prove that R is an equivalence relation.
 - (b) What's the equivalence class of $\frac{1}{2}$?
2. On the set $\mathbb{Z} \times \mathbb{Z}^*$ where \mathbb{Z}^* stands for the set of non-zero integers, consider the relation R defined by

$$(m, n) R (k, l) \iff ml = nk$$

- (a) Prove that R is an equivalence relation.
- (b) Find the equivalence class of $(1, 2)$.