

3. (a) $E(x) = x$ is even.

$O(x) = x$ is odd.

$\forall x \in \mathbb{Z}, E(x) \oplus O(x)$ where \oplus is an XOR operator.

(b) $\exists x \in \mathbb{Z}, (E(x) \wedge O(x)) \vee (\neg E(x) \wedge \neg O(x))$

(c) There is an integer that is either: both an odd and even integer, or is neither an odd or even integer.