

1. Select all the correct facts from the list below.

10 / 10 points

- ☐ Suppose we are given a graph G and asked to return a cycle involving two or more vertices OR return **None** if there are no such cycles. There is no decision version of this problem.
- ☒ Consider the language $L = \{0, 10, 100, 110, \dots\}$ of binary encodings of all even numbers. An algorithm that recognizes L is also an algorithm that given a number returns true if even and false if odd.

✓ **Correct**
Correct

- ☒ Consider the problem of finding if a graph G is strongly connected (i.e., entire graph is a single SCC). The corresponding language is $L = \{ \langle G \rangle \mid G \text{ is a graph that is strongly connected} \}$

✓ **Correct**
Correct

- ☒ It is possible to encode graphs as binary strings of 0s and 1s such that every graph G corresponds to a unique binary string.

✓ **Correct**
Correct: arguably that is what we do when we represent a graph data structure in the memory of a computer

- ☐ The problem of given a number n , checking whether or not it is prime is undecidable.