Question 1. [10 MARKS]

Part (a) [1 MARK]

Suppose we have a class called `Kettle`, with an initializer and two additional methods: `fill` and `boil`. What code is responsible for ensuring that `Kettle`'s representation invariants hold? Circle all that apply.

1. the initializer for class `Kettle`
2. the `fill` method for class `Kettle`
3. the `boil` method for class `Kettle`
4. client code of the `Kettle` class

Solution: (1), (2), and (3)

Part (b) [1 MARK]

What code can assume that the preconditions of `Kettle`'s `boil` method hold? Circle all that apply.

1. the initializer for class `Kettle`
2. the `boil` method for class `Kettle`
3. client code of the `Kettle` class

Solution: (2)

Part (c) [3 MARKS]

If we run this code, what is printed? Write your answer to the right of the code.

```
def horse(stuff: dict[int, int]) -> int:
    try:
```