Example:

If we define the learner as follows, Domain = integers from 1 to 10, and size m=4

```
def random_algo(S):
    """
    Outputs a random function for every different dataset S
    """
    rand.seed(hash(tuple(S)))
    i = rand.randint(0, 2**len(DOMAIN))
    return f_from_int(i, DOMAIN)
```

Our program would output

1) A distribution D in which there exist a function with zero loss on D:
    a) {(1, 0): 0, (1, 1): 0, (2, 0): 0, (2, 1): 0, (3, 1): 0.25, (3, 0): 0, (4, 0): 0.25, (4, 1): 0, (5, 0): 0.25, (5, 1): 0, (6, 0): 0, (6, 1): 0, (7, 0): 0, (7, 1): 0, (8, 0): 0, (8, 1): 0, (9, 1): 0.25, (9, 0): 0, (10, 0): 0, (10, 1): 0}
2) The function that has zero loss on D:
    a) {1: 1, 2: 1, 3: 1, 4: 0, 5: 0, 6: 1, 7: 1, 8: 1, 9: 1, 10: 1}
3) And expected loss of algo(S), where S is drawn from D (Should be greater than ¼)
    a) Expected loss: 0.7083333333333333