Prob Review Lab Write-up

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Part 1

Output of test_part1.py

```
test/test_part1.py::TestFunctionEvaluatePMF::test_throws_when_probabilities_do_not
_sum_to_one PASSED
[  6%]
test/test_part1.py::TestFunctionEvaluatePMF::test_throws_when_passed_negatively_li
kely_outcomes PASSED
[ 13%]
test/test_part1.py::TestFunctionEvaluatePMF::test_correct_for_two_dice_sum PASSED
[ 20%]
test/test_part1.py::TestFunctionEvaluatePMF::test_correct_for_two_dice_diff PASSED
[ 26%]
test/test_part1.py::TestFunctionEvaluatePMF::test_correct_for_rolling_doubles
PASSED
[ 33%]
test/test_part1.py::TestFunctionExpectedValue::test_throws_when_probabilities_do_n
ot_sum_to_one PASSED
[ 40%]
test/test_part1.py::TestFunctionExpectedValue::test_throws_when_passed_negatively_
likely_outcomes PASSED
[ 46%]
test/test_part1.py::TestFunctionExpectedValue::test_throws_when_passed_empty_pmf
PASSED
[ 53%]
test/test_part1.py::TestFunctionExpectedValue::test_correct_for_two_dice_sum
PASSED
[ 60%]
test/test_part1.py::TestFunctionExpectedValue::test_correct_for_two_dice_diff
PASSED
[ 66%]
test/test_part1.py::TestFunctionVariance::test_throws_when_probabilities_do_not_su
m_to_one PASSED
[ 73%]
test/test_part1.py::TestFunctionVariance::test_throws_when_passed_negatively_likel
y_outcomes PASSED
[ 80%]
test/test_part1.py::TestFunctionVariance::test_throws_when_passed_empty_pmf PASSED
[ 86%]
test/test_part1.py::TestFunctionVariance::test_correct_for_two_dice_sum PASSED
[ 93%]
test/test_part1.py::TestFunctionVariance::test_correct_for_two_dice_diff PASSED
[100%]
```

1.4 Wrap Up

- Why does the PMF for the sum of two dice look the way it does? Can you explain why a value of 7 is more likely than a value of 10?
    - The PMF for the sum of two dice look the way it does because the likelihood of getting a number in the middle is higher than a low number or a high number. In the case of two six-sided dice, a value of 7 is more likely than a value of 10. The reason why is because there are more combinations of (1 to 6) + (1 to 6) that adds up to 7 than there are that adds up to 10.
        - 10: 4+6, 5+5
        - 7: 1+6, 2+5, 3+4