

Homework 2

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Problem 4: Let x be a random variable that denotes the sum of the values on a roll of 2 dice (8 sided dice with equal prob of getting any face (1-7))

1. What is the expected value of x ?

```
set.seed(123)

nreps <- 10000000

# Simulate rolling two 8-sided dice
dice_rolls <- replicate(nreps, sum(sample(1:8, size = 2, replace = TRUE)))

# Calculate the expected value of the sum of the dice rolls
expected_value <- mean(dice_rolls)

# Print the result
cat("Expected value of X (sum of two 8-sided dice) = ", expected_value, "\n")
```

```
## Expected value of X (sum of two 8-sided dice) = 9.000869
```