

## “Struck by Lightning” Supplementary Materials

### Group exercise about poker probabilities.

You will be assigned to new groups. Introduce yourselves to each other before you begin. Then, working cooperatively with your group, answer the following questions.

#### **PART ONE: WAITING FOR ONE MORE CARD**

Suppose you are playing poker with a usual 52-card deck of playing cards. Suppose your first four cards are Ten of Spades, Jack of Spades, Queen of Spades, and King of Spades, and you have one more card to come (for a total of five cards). Suppose you cannot see any of your opponents' cards. Compute the probability that you will end up with:

1. A royal flush (i.e., the cards Ten-Jack-Queen-King-Ace, all of the same suite).
2. A straight flush (i.e., five cards all in a row, all of the same suite).
3. A flush (i.e., five cards all of the same suite).
4. A straight (i.e., five cards all in a row).
5. A pair of Kings.
6. Some pair.

#### **PART TWO: WAITING FOR TWO MORE CARDS**

Suppose you are playing poker with a usual 52-card deck of playing cards. Suppose your first three cards are Ten of Spades, Jack of Spades, and King of Spades, and you have two more cards to come (for a total of five cards). Suppose you cannot see any of your opponents' cards. Compute the probability that you will end up with:

7. A royal flush (i.e., the cards Ten-Jack-Queen-King-Ace, all of the same suite).
8. A straight flush (i.e., five cards all in a row, all of the same suite).
9. A flush (i.e., five cards all of the same suite).
10. A straight (i.e., five cards all in a row).
11. Three Kings.
12. Some three-of-a-kind (i.e., three cards which are all the same except for suit).
13. A pair of Kings and a pair of Jacks.
14. Nothing (i.e., no straight or flush or pair or three-of-a-kind).