

Elementary Statistics	Name: _____
Study Guide 12	Class: _____
Due Date: _____	Score: _____

Your solutions must be consistent with class notes & resources.

Be Neat, Organized, and No Work \Leftrightarrow No Points

1. (2 points) Reduce the ratio of 175 to 400. Use colon notation to express your final answer as odds.

1. _____

2. (2 points) The odds in favor of event E is given as 4 : 21. Find the odds against event E .

2. _____

3. The odds in favor of event E is given as 3 : 17. Find

(a) (2 points) $P(E)$

(a) _____

(b) (2 points) $P(\bar{E})$

(b) _____

4. (2 points) The probability that LA Lakers win the NBA championship this year is 0.12. Find the odds against the LA Lakers winning the NBA championship this year.

4. _____

5. Suppose you tossed a coin 500 times and recorded 175 tails and 325 heads.
- (a) (2 points) Find the probability of tossing this coin and record a tail in reduced fraction.

(a) _____

- (b) (2 points) Find the odds in favor of recording a tail when tossing this coin. Express your answer in colon notation.

(b) _____

6. Consider a full deck of playing cards,

- (a) (2 points) Find the odds in favor of drawing a red face card. Express your answer in colon notation.

(a) _____

- (b) (2 points) Find the odds in favor of drawing a red card. Express your answer in colon notation.

(b) _____

- (c) (2 points) Find the odds in favor of drawing an ace or a face card. Express your answer in colon notation.

(c) _____

7. Given: $P(A) = 0.6$, $P(B) = 0.5$, and A and B are independent events. Find

- (a) (2 points) $P(A \text{ and } B)$

(a) _____

- (b) (2 points) $P(A \text{ or } B)$

(b) _____

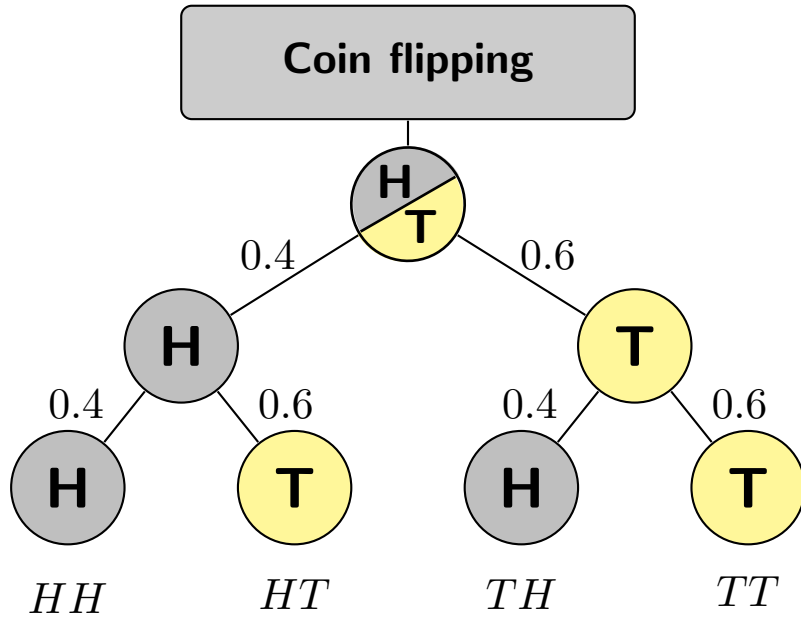
8. Given: $P(A) = 0.8$, $P(B) = 0.4$, and A and B are independent events. Find
 (a) (2 points) $P(A \text{ and } B)$

(a) _____

- (b) (2 points) $P(A \text{ or } B)$

(b) _____

9. A biased coin with $P(H) = 0.4$, and $P(T) = 0.6$ is tossed twice. The tree diagram of sample space is given below:



- (a) (3 points) Find the probability of getting exactly one tail.

(a) _____

- (b) (3 points) Find the probability of getting at least one tail.

(b) _____

10. A family plans to have 3 children.

- (a) (4 points) Construct the tree diagram below for a family with 3 children, then display all corresponding probabilities next to each branch, and clearly write all outcomes at the bottom of the tree similar to the tree diagram in problem 9.

Use B for boy and G for girl.

- (b) (3 points) Construct the sample space for a family with 3 children.

(b) _____

- (c) (3 points) Find the probability of having exactly one girl.

(c) _____

- (d) (3 points) Find the probability of having exactly two girls.

(d) _____

- (e) (3 points) Find the probability of having at least one girl.

(e) _____

Setting goals are a great way to increase our motivation.