

MA 162: Finite Mathematics - Section 7.4

Fall 2014

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November 10, 2014

Announcements:

- Homework 7.3 due next Tuesday at 6pm.
- Homework 7.4 due Friday at 6pm.

7.4 - Counting Techniques in Probability

- Let S be a uniform sample space (all outcomes equally likely).
- Let E be any event in S .
- To find the probability of E , find:
 - the number of outcomes in E
 - the number of possible outcomes in S
- Then divide to get

$$P(E) = \frac{n(E)}{n(S)}$$

7.4 - Playing Cards

- A 5 card hand is drawn from a standard deck of 52 cards.
- What is the probability of drawing “three of a kind” (not a full house)?

7.4 - Multiple Choice Exam

- A math test consists of 15 multiple choice questions.
- Each question has 4 choices.
- One student forgot to study and decides to randomly guess on every question.
- What is the probability that the student gets exactly 6 questions correct?

7.4 - Multiple Choice Exam

- A math test consists of 15 multiple choice questions.
- Each question has 4 choices.
- One student forgot to study and decides to randomly guess on every question.
- What is the probability that the student gets an B (80% or higher) on the exam?

7.4 - Defective Phones

A tech company manufactures cell phones and distributes them through the mail. The most recent batch of 1000 phones made has 20 defective phones in it.

- A large financial corporation orders 200 phones for its employees from this batch of phones. What is the probability that exactly 3 of the ordered phones are defective?

- What is the probability that at least one of the phones is defective?

7.4 - Drawing Marbles

- A box contains 6 red marbles, 9 white marbles, and 11 blue marbles.
- You reach in and draw 4 marbles at the same time.
- What is the probability that you draw 1 red marble and 3 blue marbles?

7.4 - Drawing Marbles

- A box contains 6 red marbles, 9 white marbles, and 11 blue marbles.
- You reach in and draw marbles one at a time, without replacement.
- What is the probability that you draw your first white marble on the 3rd pull?

Exploration - Conditional Probability with Playing Cards

- Two cards are drawn in succession (without replacement) out of a standard deck of 52 cards.
- What is the probability that the second card is a diamond, given that the first card drawn is not a diamond?

- What is the probability that the second card is a diamond, given that the first card is a diamond?

- What is the probability that the second card is a diamond?