

MA 202
Spring Semester 2004

WARNING: You must **SHOW ALL OF YOUR WORK**. You will receive NO CREDIT if you do not show your work.

DUE: TUESDAY, 02 MARCH 2004

1. M&M's – Experiment 1

- (a) Each student should select one M&M from his or her bag of M&M's. As a class we have now conducted _____ experiments. Use these experiments to answer the following questions.
 - i. What is the empirical probability of selecting a yellow M&M from a bag of M&M's?
 - ii. What is the empirical probability of selecting a red M&M from a bag of M&M's?
 - iii. What is the empirical probability of selecting an orange M&M from a bag of M&M's?
 - iv. What is the empirical probability of selecting a blue M&M from a bag of M&M's?
 - v. What is the empirical probability of selecting a brown M&M from a bag of M&M's?
 - vi. What is the empirical probability of selecting a green M&M from a bag of M&M's?
- (b) Each student should replace the M&M he or she selected. Then he or she should select another M&M. As a class we have now conducted _____ experiments. Use these experiments to answer the following questions.
 - i. What is the empirical probability of selecting a yellow M&M from _____ probability?

How is a position defended or refuted by using mathematical data? •

How is the area of a region determined? •

Lesson

Overview: •

Before allowing the students the opportunity to start the activity: access their prior knowledge with regard to determining geometric probability. Discuss with students the types of games that they have played such as darts, hop-scotch, skeet ball, etc. Discuss games where geometric probability occur. How many students have gone bowling? How easy it is the knock down a single pin? How many have played or seen the games on television? •

Remind students that the probability of an event is a ratio between 0 and 1 inclusive. •

$P(A \text{ and } B) = P(A) \cdot P(B)$ •

Experimental probability = $\frac{\text{Number of successes}}{\text{Number of tries}}$ •

Theoretical probability is $P(E) = \frac{\text{Number of desired (favorable) outcomes in the event}}{\text{Total number of (possible) outcomes in the sample space}}$ •

Expand the questions in each activity as much as possible. •

Allow students the use of a protractor to draw the spinner accurately on question #2 in Activity 1. •