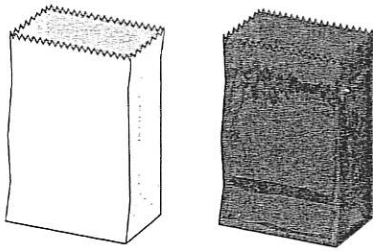
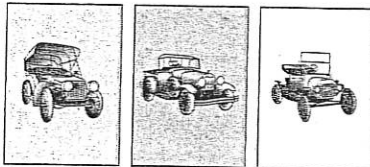


The Counting Principle

1. **CANDY** Amy, Bruce, and Carol can choose one piece of candy from either a white or black bag. The white bag contains various chocolates. The black bag contains small bags of jelly beans. Amy picks from the white bag, and Bruce and Carol both pick from the black bag. Describe whether each of the picks is related as dependent or independent events.



2. **PHOTOS** Morgan has three pictures that she would like to display side by side.



In how many different ways can the pictures be displayed?

3. **COMBINATION LOCKS** Eric uses a combination lock for his locker. The lock uses a three number secret code. Each number ranges from 1 to 35, inclusive. How many different combinations are possible with Eric's lock?

4. **TRUE OR FALSE** Faith is preparing a true or false quiz for her biology class. How many different answer keys can there be for a 10 question true or false quiz?

WEBSITES For Exercises 5-8, use the following information.

Greg is registering to use a website. The website requires him to choose an 8-character alphanumeric password that is not case-sensitive. In other words, for each character, he can choose one of the 26 letters A through Z or one of the 10 digits 0 through 9.

5. How many different passwords are possible?
6. Greg decides to use a password that does not contain any repeated characters. How many different passwords are possible with this constraint?
7. Suppose Greg chooses to use only letters with possible repeats. How many different passwords would be possible?
8. If Greg's password begins with his first name and ends with his birth month and date, how many possibilities would need to be checked to find his password?