1) If we randomly rearrange the letters of the word PUNTERS;
   a) Find the probability that it will start with an T.
   b) Find the probability that it will start with T and end with P.
   c) Find the probability that letters will be in an alphabetical order

2) In a group of 28 people, find the probability that nobody has the same birthday. (4 decimal places)

3) In a group of 28 people, find the probability that at least two people share a birthday. (4 decimal places)

4) In a group of 17 people, find the probability that at least two people share a birth week. (4 decimal places)

(Assume all birth months are equally likely)

5) In a group of 8 people, find the probability that nobody was born in the same month. (4 decimal places)

6) In a group of 8 people, find the probability that at least two people were born in the same month. (4 dec places)

7) Two of the 52 cards are drawn at random from a deck without replacement; (answer in Fraction Form)
   a) Find the probability that the first one is a king.
   b) Find the probability that the second one is a king.
   c) Find the probability that both are kings.
   d) Find the probability that exactly one is a king.
   e) Find the probability that at least one is a king.
   f) Find the probability that at most one is a king.
   g) Find the probability that neither one is a king.

8) If a six letter password is randomly generated from the alphabet (repetition allowed), then find the probability that it contains a vowel (a, e, i, o, or u). (4 decimal places)

9) If P(A) = .36 and P(B | A) = .25, and P(B) = .29 then find; (4 decimal places if necessary)
   a) P($A \cap B$) b) P($A \cup B$) c) P(A | B) d) P($\overline{B}$ | A)

10)A Bag contains 16 red, 10 blue, and 4 green chips. If two chips are selected at random, without replacement; (Answer in fraction form.)
   a) Find the probability that they are both red.
   b) Find the probability that at least one is blue.
   c) Find the probability that exactly one is green.
   d) Find the probability that they are the same color.
   e) Find the probability that they are different colors.

11) A bag of marbles is represented by the following table;

	Red	Blue	White
Small	6	7	9
Medium	8	2	5
Large	3	4	1

Assuming a random selection… (FRACTION FORM, reduced)

a) Find the probability that a marble is red.

b) Find the probability that a red marble is not medium.

c) Find the probability that a small marble is not blue.

d) Find the probability that a marble is not large and white.

e) Find the probability that a marble is neither large nor white.

12) Let A and B be independent events. P(A) = .44 and P(B) = .27. (4 decimal places)

a) Find P($A \cap B$).

b) Find P(A | B).

c) Find P($B|\overline{A}$).

d) Find P($A \cup B$).

e) Find P($\overline{B}|A$)

Solutions to Practice 4 (revision 1)

1a) $\frac{1}{7}$ b) $\frac{1}{42}$ c) $\frac{1}{5040}$ 2) .3455 3) .6545 4) .947 5) .0464 6) .9536

7a) $\frac{1}{13}$ b) $\frac{1}{13}$ c) $\frac{1}{221}$ d) $\frac{32}{221}$ e) $\frac{33}{221}$ f) $\frac{220}{221}$ g) $\frac{188}{221}$

8) .7224 9a) .09 b) .56 c) .3103 d) .75

10a) $\frac{8}{29}$ b) $\frac{49}{87}$ c) $\frac{104}{435}$ d) $\frac{57}{145}$ e) $\frac{88}{145}$

11 a) $\frac{17}{45}$ b) $\frac{9}{17}$ c) $\frac{15}{22}$ d) $\frac{14}{45}$ e) $\frac{23}{45}$

12 a) .1188 b) .44 c) .27 d) .5912 e) .73