1. ☐ 10 pts. One card is selected from a deck of playing cards. Find the probability of selecting a king or a club.

2. ☐ 10 pts. each Two cards are selected at random. Find the probability the first shows a 2 and the second shows a queen

   (a) with replacement.

   (b) without replacement.

3. ☐ 10 pts. Each question of a six-question multiple-choice exam has four possible answers. Oliver Windybum picks an answer at random for each question. Determine the probability that he selects the correct answer on only the third and fourth questions.

4. ☐ 10 pts. each Consider the data below giving the ages of a sample of Vulcan citizens.

AGE	MALE	FEMALE	TOTAL
0-60	41	30	71
61-120	109	85	194
over 120	21	14	35
Total	171	129	300

   If an individual is selected at random, find the probability that the person is:

   (a) 0-60 years old, given the person is male.

   (b) Female, given the person is over 120.

   (c) 61-120 or over 120, given the person is male.

5. ☐ 10 pts. each Assume that a password to log onto a computer account is to consist of four letters followed by two digits. Determine the number of possible passwords if:

   (a) Repetition is not permitted.

   (b) Repetition is permitted.

6. ☐ 10 pts. A bank has three drive-through stations. Assuming that each is equally likely to be selected by customers, in how many different ways can the next 10 drivers select a station?

7. ☐ 10 pts. Determine the total number of possible permutations of the letters in the Dutch word SPAARNDAMMERBUURT.

8. ☐ 10 pts. Professor Plaidbritches bought 26 different Hummel figurines on e-Bay, but she only has room for 18 of them on her mantel. In how many ways can she select 18 Hummels to display on the mantel?

9. [10 pts.] Office Despot has 12 different printers and 8 different monitors in stock. The manager wants to place 5 of the 12 printers and 3 of the 8 monitors on sale. In how many ways can the manager select the items to be listed as sale items?

10. [10 pts.] The numbers 0 through 15 are put in a hat on slips of paper. If four slips are selected at random, what's the probability that the four numbers selected are greater than 6?

11. [10 pts.] A game show has 7 doors, of which the contestant must pick 2. Behind 2 doors are cars, and behind the other 5 doors are solar-powered sun dials. A contestant wins what's behind the chosen doors. Determine the probability that the contestant wins:

   (a) Both cars.
   (b) At least one car.

12. [10 pts.] A pair of aces and a pair of 8's is known as a "dead man's hand." Determine the probability of being dealt a dead man's hand (any two aces, any two 8's, and one other card that is not an ace or an 8) when 5 cards are dealt without replacement.

13. [10 pts.] A quality control engineer at the Illuminati lightbulb plant finds that 0.5% of its bulbs are defective. Determine the probability that exactly 2 of the next 14 bulbs made are defective.

14. [10 pts. each] Duncan McDoogalhauser has to take a ten question multiple-choice quiz in his macroeconomics class. Each question has five choices, with one being correct. Assuming Mr. McDoogalhauser guesses on all ten questions on account of being too knackered from the previous night's carousing about town and engaging in fisticuffs over the finer points of Keynesian economic theory with a biker gang, find the probability that he will answer:

   (a) Exactly half the questions correctly.
   (b) At least nine questions correctly.
   (c) At least one question correctly.