COUNTING & PROBABILITY (Q 6, PAPER 2)

2000

- 6 (a) To go to work, a woman can walk or travel by bus or travel by car with a neighbour. To return home, she can walk or travel by bus.
 - (i) In how many different ways can the woman go to and return from work on any one day?
 - (ii) List all of these different ways.
 - (b) In a class, there are 15 boys and 13 girls. Four boys wear glasses and three girls wear glasses.

A pupil is picked at random from the class.

- (i) What is the probability that the pupil is a boy?
- (ii) What is the probability that the pupil wears glasses?
- (iii) What is the probability that the pupil is a boy who wears glasses?

A girl is picked at random from the class.

- (iv) What is the probability that she wears glasses?
- (c) (i) How many different five-digit numbers can be formed from the digits 2, 3, 4, 5, 6? Each digit can be used once only in each number.
 - (ii) How many of the numbers are even?
 - (iii) How many of the numbers are less than 40 000?
 - (iv) How many of the numbers are both even and less than 40 000?

ANSWERS

- 6 (a) (i) 6
 - (ii) {(Walk, Walk), (Walk, Bus), (Bus, Walk), (Bus, Bus), (Car, Walk), (Car, Bus)}
 - (b) (i) $\frac{15}{28}$
- (ii) $\frac{1}{4}$
- (iii) $\frac{1}{7}$
- (iv) $\frac{3}{13}$

- (c) (i) 120
- (ii) 72
- (iii) 48
- (iv) 30