1. In a recent socioeconomic survey, 400 married women were asked to check the appropriate circle or circles on the following form:

○ I have a career.  ○ I have a child.

The results were as follows: 278 checked the child circle, 175 checked the career circle, and 77 were blank (no circles checked). Find the following:
(a) The number of participating women that checked at least one circle.

(b) The number of married women that checked both circles.

2. (a) How many five-digit zip codes are possible?

(b) How many of these zip codes contain no repeated digits?

3. A certain model of automobile is available in four exterior colors, three interior colors, and three interior styles. In addition, the transmission can be either automatic or manual, and there is a choice between a six cylinder engine and a four cylinder engine. How many different versions of the automobile can be ordered?