

EVEN MORE PROBABILITY

1. The Ladies' Committee made 100 lucky dips for the school fete. 50 of the lucky dips contained a comic and a ring, 30 contained a comic and a badge and the remainder contained a comic and a whistle. Lauren and Emma each bought a lucky dip. What is the probability that
 - (i) Lauren's lucky dip contains a whistle?
 - (ii) Emma's lucky dip contains a comic?
 - (iii) Both Lauren's and Emma's lucky dip contain a ring?
 - (iv) Neither Lauren's nor Emma's lucky dip contain a badge?
 - (v) Lauren's lucky dip contains a ring and Emma's lucky dip contains a badge?

2. Rachael took the 4, 5, 6, 7 & 8 of hearts out of a pack of cards and then placed three of them on the table to make a 3 digit number. What is the probability of the number being
 - (i) Even?
 - (ii) Odd?
 - (iii) Divisible by 5?
 - (iv) Greater than 600?
 - (v) Less than 600?
 - (vi) Greater than 750?

3. The teacher had a strange way of randomly checking the students' maths homework. He had two dice, one red and the other white. At the beginning of each period he would roll the dice three times to form three two digit numbers. The first digit was the value shown on the red die (die is singular of dice but mice is not the singular of mice) and the second digit, the number shown on the white die.
 - (i) How many two digit numbers could the teacher form?
 - (ii) If he allocated each student in the class of 30, a different two digit number, what is the probability of Sarah, a member of the class, being allocated the number 63?
 - (iii) What is the probability that the first number that the teacher rolls has not been allocated to any student?
 - (iv) What is the probability that the first two numbers that the teacher rolled were the same?
 - (v) What is the probability that the three numbers that the teacher rolls have not been allocated so that the teacher does not check anybody's homework?

4. Tom, Jim and Gus each selected 3 cards with letters on them to make up their names. Gus shuffled the 9 cards and then chose 3 at random. What is the probability that
 - (i) He could spell his own name with the letters chosen?
 - (ii) He could spell the name "Tom" with the letters chosen?

Answers: 1. (i) $\frac{1}{5}$, (ii) 1, (iii) $\frac{1}{4}$, (iv) $\frac{49}{100}$, (v) $\frac{3}{20}$

2. (i) $\frac{3}{5}$, (ii) $\frac{2}{5}$, (iii) $\frac{1}{5}$, (iv) $\frac{3}{5}$, (v) $\frac{2}{5}$, (vi) $\frac{7}{20}$

3. (i) 36, (ii) $\frac{1}{36}$, (iii) $\frac{1}{6}$, (iv) $\frac{1}{36}$, (v) $\frac{1}{216}$

4. (i) $\frac{1}{84}$,

(ii) $\frac{1}{42}$