GCSE FOUNDATION · REVISION MAT 4

Listing and the product rule

1 A café offers a way to travel and a day.

Way to travels: Bus, Train
Days: Mon, Wed, Fri

List all the possible combinations.

2 Here are three digit cards: 5, 7, 9

Two cards are used to make a 2-digit number.

List all the numbers that can be made.

3 A café sells 3 starters and 7 mains.

A meal is one of each.

Val says there are 10 different meals.

Explain why Val is wrong.

4 Show that the letters of the word FROG can be arranged in 24 different orders.

5 A padlock code uses 4 digits. Each digit is 0 to 9.

(a) How many different codes are there?

(b) How many codes are there if the first digit must be even?

6 Two people are chosen from Pip, Raj, Sue, Tom and Uma to be team captains.

List all the possible pairs.

How many pairs are there?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 4

Listing and the product rule

1 Bus–Mon, Bus–Wed, Bus–Fri
Train–Mon, Train–Wed, Train–Fri

6 combinations

2 **57, 59, 75, 79, 95, 97**

(6 numbers)

3 Each of the 3 starters can go with each of the 7 mains.

3 × 7 = **21** meals, not 10

4 4 × 3 × 2 × 1 = 24 ✓

4 choices for the first letter, then 3, then 2, then 1.

5 (a) 10 × 10 × 10 × 10 = **10,000**

(b) 5 × 10 × 10 × 10 = **5,000**

6 Pip & Raj, Pip & Sue, Pip & Tom, Pip & Uma, Raj & Sue, Raj & Tom, Raj & Uma, Sue & Tom, Sue & Uma, Tom & Uma

10 pairs