

Systematic Listing

ANSWERS

1

Three cards show 2, 5 and 7. List all the 3 digit numbers you can make using each card once.

2	5	7	2	7	5
5	2	7	5	7	2
7	2	5	7	5	2

Fix the first one. Change the rest in order.

How many? 6

2

Three cards show 1, 4 and 8. List all the 3 digit numbers you can make using each card once.

1	4	8	1	8	4
4	1	8	4	8	1
8	1	4	8	4	1

How many? 6

3

Three cards show 3, 6 and 9. List all the 3 digit numbers you can make using each card once.

3	6	9	3	9	6
6	3	9	6	9	3
9	3	6	9	6	3

How many? 6

4

Ava (A), Bea (B) and Cal (C) line up for a photo. List all the orders they can stand in.

A	B	C	A	C	B
B	A	C	B	C	A
C	A	B	C	B	A

How many? 6

5

A meal deal is one main and one side. Mains: pizza (P), curry (C), burger (B). Sides: fries (F), salad (S). List all the meal deals.

P	F	P	S
C	F	C	S
B	F	B	S

How many? 6

6

Four cards show 1, 2, 3 and 4. List all the 2 digit numbers you can make using two of the cards.

1	2	1	3	1	4
2	1	2	3	2	4
3	1	3	2	3	4
4	1	4	2	4	3

How many? 12

7

Two of Dan (D), Eve (E), Fay (F) and Gus (G) are picked for a quiz team. List all the possible pairs.

D	E	D	F	D	G
E	F	E	G		
F	G				

How many? 6

8

Three cards show 0, 3 and 8. List all the 3 digit numbers you can make using each card once. A number cannot start with 0.

3	0	8	3	8	0
8	0	3	8	3	0

How many? 4

Systematic Listing *further practice*

ANSWERS

9

Kim chooses two different fillings for a sandwich from ham (H), cheese (C), egg (E), tuna (T) and salad (S). List all the pairs of fillings she could choose.

H	C	H	E	H	T	H	S
C	E	C	T	C	S		
E	T	E	S				
T	S						

How many? 10

10

A school dinner is one starter, one main and one pudding. Starters: soup (S), melon (M). Mains: fish (F), pie (P). Puddings: cake (C), jelly (J). List all the dinners.

S	F	C	S	F	J
S	P	C	S	P	J
M	F	C	M	F	J
M	P	C	M	P	J

How many? 8

11

Four cards show 2, 3, 5 and 6. List all the even 2 digit numbers you can make using two of the cards.

2	6
3	2
5	2
6	2

How many? 6

12

Lily lists the 3 digit numbers she can make using each of the cards 1, 5 and 8 once. Here is her list. Which numbers has she missed?

158 581 815 185

158, 185, 518, 581, 815, 851

Answer 518 and 851

13

Jo has a 10p coin, a 20p coin and a 50p coin. List all the amounts of money she can make using one or more of her coins.

one coin: 10p, 20p, 50p
two coins: 30p, 60p, 70p
three coins: 80p

How many? 7

14

Ava (A), Bo (B), Cy (C) and Di (D) stand in a line. Ava stands at the front. List all the orders they can stand in.

A	B	C	D	A	B	D	C
A	C	B	D	A	C	D	B
A	D	B	C	A	D	C	B

How many? 6

15

Adult tickets cost £6 and child tickets cost £4. A group spends exactly £36 on tickets. The group has at least one adult and at least one child. List all the possible groups.

2 adults and 6 children
4 adults and 3 children

try 1, 2, 3 ... adults

How many? 2

16

Ella buys two tins of paint in different colours. She chooses from red, blue, green and yellow. She says there are 12 ways to choose, because she counts red and blue, and blue and red. Is she right? Explain.

red and blue = blue and red

Answer No, there are 6 ways