

Systematic Listing

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NAME _____

DATE _____

-
- 1** A stir-fry is made with three different vegetables. The vegetables are chosen from  EITHER PAPER 2 MARKS

- carrot (c) - broccoli (b) - pepper (p) - onion (o)

List all the possible options for the three vegetables.

One option has been done for you: *cbp*

-
- 2** Here are four cards. Each card shows a digit.  EITHER PAPER 4 MARKS

7, 6, 9, 5

Grace chooses two of the cards and puts them side by side to make a two-digit number.

- (a) Calculate how many different two-digit numbers she can make.
 - (b) List all the even two-digit numbers she can make.
 - (c) State the largest two-digit number she can make.
-

3 Here are the subjects available in Year 12 at a school.

 EITHER PAPER 3 MARKS

Block 1	Block 2	Block 3	Block 4
Maths	Geography	English	Spanish
History	Drama	Physics	Biology
French	Chemistry	Computing	Art

Students choose three subjects. They cannot choose more than one subject from a block.

Grace decides to study Maths. Grace decides not to study any of these subjects:

- Drama
- English
- Physics
- Spanish
- Art

By listing, show that there are five groups of three subjects that Grace could choose.

4 Put the whole numbers 2 to 13 into the boxes to make the calculations correct.

 EITHER PAPER 3 MARKS

Only use each number once.

$$\square + \square + \square = 19$$

$$\square + \square + \square = 9$$

$$\square + \square + \square = 36$$

$$\square + \square + \square = 26$$

- 5 The numbers 1 to 12 are put in a grid. Six of the numbers are shown. The letters A to F stand for the six numbers that are missing.

 EITHER PAPER 3 MARKS

11	8	A	B
C			5
10			D
E	7	F	12

Each of the four sides of the grid must add up to 29. Complete the grid using the numbers 1, 2, 3, 4, 6, 9. Use each of them once, and give the number that each letter stands for.

The flavours are peach (p), orange (o), vanilla (v) and coffee (c).

The two scoops can be the same flavour or different flavours.

(a) List all the possible options for the two scoops. The order of the scoops does not matter.

One option, vv, has been written in for you.

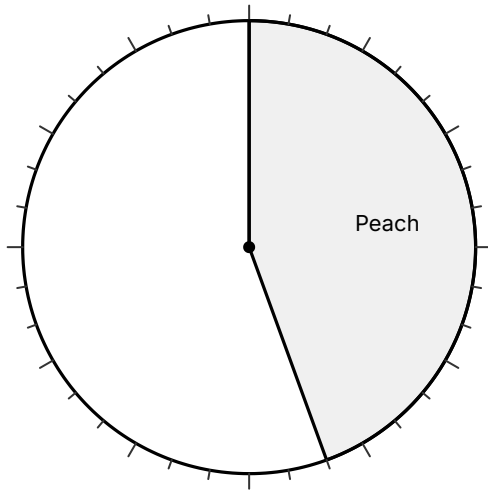
(b) In one day the shop sells 144 scoops of ice cream. The table shows the number of scoops of each flavour.

Flavour	Number of scoops
Peach	64
Orange	20
Vanilla	24
Coffee	36

A
pie
chart
is to
be
drawn
to
show
the
data.
Work
out
the
angle,
in
degrees,
that
stands
for
one
scoop.

(c) The sector for peach has been drawn. The marks round the circle are 10° apart.

Complete the pie chart to show the data in the table in part (b).



7 Rosa has six banknotes.

EITHER PAPER 2 MARKS

The value of each banknote is £10, £20 or £50.

She can make £60 using four of the banknotes.

She can make £70 using three of the banknotes.

She cannot make £50 using any four of the banknotes.

She cannot make £130 using any four of the banknotes.

List the values of the six banknotes.

- 8 In a game, three stars are hidden on this board. Each star is behind a different square.

⌂ EITHER PAPER 2 MARKS

	a	b	c	d	e
1					
2					
3					
4					

The stars are behind three consecutive squares. The squares are in one row or one column. One of the squares is b2. It is shaded on the board. Write down all the possible pairs for the other two squares.

-
- 9 A code has five different digits.

⌂ EITHER PAPER 3 MARKS

Each digit is a whole number that is at least 1 and less than 8.

The digits are written in order, starting with the smallest.

The fourth digit is the only multiple of 3.

The first digit is the only square number.

Work out the code.

-
- 10 Erin has a 6-digit code.

⌂ EITHER PAPER 3 MARKS

Erin remembers it as three 2-digit numbers written side by side.

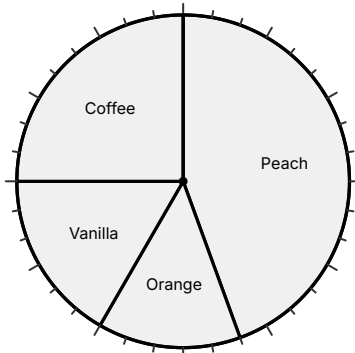
The first number is between 11 and 21.

The second number is 6 times the first number.

The third number is 5 times the first number.

All six digits are different.

Work out the code.

1	<i>bpo, cpo, cbo, cbp</i> , in any order	2	(a) 12 (b) 56, 76, 96 (c) 97																		
3	<table><tr><th>Subject 1</th><th>Subject 2</th><th>Subject 3</th></tr><tr><td>Maths</td><td>Geography</td><td>Computing</td></tr><tr><td>Maths</td><td>Chemistry</td><td>Computing</td></tr><tr><td>Maths</td><td>Geography</td><td>Biology</td></tr><tr><td>Maths</td><td>Chemistry</td><td>Biology</td></tr><tr><td>Maths</td><td>Computing</td><td>Biology</td></tr></table>	Subject 1	Subject 2	Subject 3	Maths	Geography	Computing	Maths	Chemistry	Computing	Maths	Geography	Biology	Maths	Chemistry	Biology	Maths	Computing	Biology	4	$5 + 6 + 8 = 19$; $2 + 3 + 4 = 9$; $11 + 12 + 13 = 36$; $7 + 9 + 10 = 26$ (the three numbers in each calculation may be in any order)
Subject 1	Subject 2	Subject 3																			
Maths	Geography	Computing																			
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Maths	Chemistry	Biology																			
Maths	Computing	Biology																			
5	A = 1, B = 9, C = 2, D = 3, E = 6, F = 4	6	(a) all 10 options, in any order and either way round: pp, po, pv, pc, oo, ov, oc, vv, vc, cc (b) 2.5 (c) Sectors of 50° for orange, 60° for vanilla and 90° for coffee, in any order round the chart (c) 																		
7	£10, £10, £20, £20, £20, £50 (in any order)	8	(a2, c2), (c2, d2), (b1, b3), (b3, b4)																		
9	12567	10	137865																		