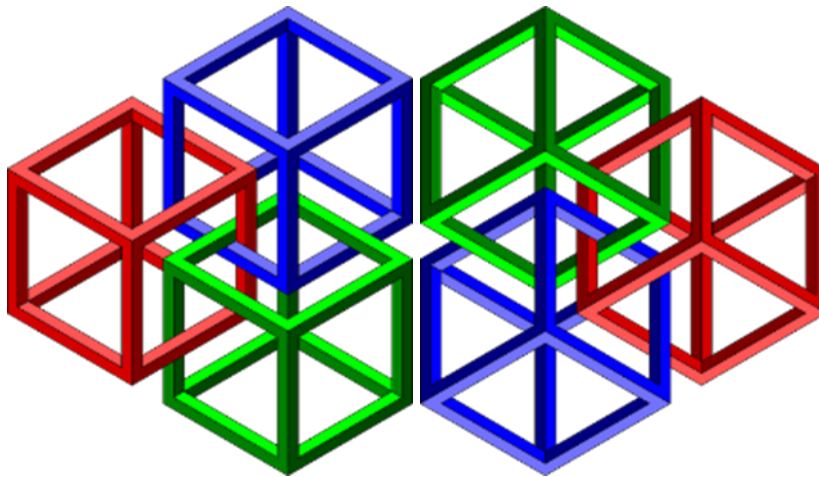




MATHS PUZZLE BOOK VOLUME EIGHT

= for keen puzzlers aged 9 to 105! =



- ◇ The reason for producing this Puzzle Book is because I am aware that in this era of the “virus”, periods of boredom will creep in and the puzzles can be done as light relief.
- ◇ This document is not connected to any organisation and there are no financial implications involved. This is me giving back to Society which has treated me well.
- ◇ This booklet can be printed in black and white or colour and it can be printed page by page if you do not want to print the whole document.
- ◇ I have a great deal more material to consider for further publications. Do let me know which are your favourite puzzles and I will include more in the next edition.

Puzzles created or adapted by Douglas Buchanan





MAKE 24

Using ALL four numbers write a number sentence where the result is 24.

You can only use the simple operations addition, multiplication, subtraction and division. You cannot use the numbers more than once

1	4	9	10	
3	4	6	12	
2	2	2	12	
2	5	8	10	
7	7	8	15	

CROSS NUMBERS

Using the values below the grids fill in the spaces to make the totals shown in the shaded squares

	x		12
÷		+	
	-		1
2		4	
1	2	3	4

	x		6
+		+	
	÷		4
7		3	
1	2	3	4

	÷		2
+		x	
	x		3
5		6	
1	2	3	4

	+		+		11
+		-		+	
	+		-		8
7		1		3	
1	2	3	4	5	6

	+		÷		5
-		x		-	
	+		+		9
1		12		1	
1	2	3	4	5	6

	+		+		7
+		x		x	
	+		-		4
7		6		20	
1	2	3	4	5	6

	+		÷		4
+		-		x	
	+		-		3
9		4		8	
1	2	3	4	5	6





ORDERING CARDS

By reading through the instructions put the numbers in the correct order.

Using playing cards or numbered cards will make it easier to solve. *None of the numbers are in their actual positions. 1 cannot be the first card, 2 cannot be the second card and so on.*

A: Cards 1 2 3 4

- The first and third cards add up to 5

B: Cards 1 2 3 4 5

- The first and second cards add up to 6
- The fourth and fifth cards equal 3 when multiplied together
- The 5 is two places away from the 5

C: Cards 1 2 3 4 5 6

- The second and third cards equal 10 when multiplied together
- The 1 is three places away from the 3 and to the left of 4

D: Cards 1 2 3 4 5 6 7

- The 6 is three places away from the 7 and 5 places away from the 5
- The fifth card is a multiple of the third card
- The 3 is five cards away from the 1
- The first and last cards equal 18 when multiplied together

E: Cards 1 2 3 4 5 6 7 8

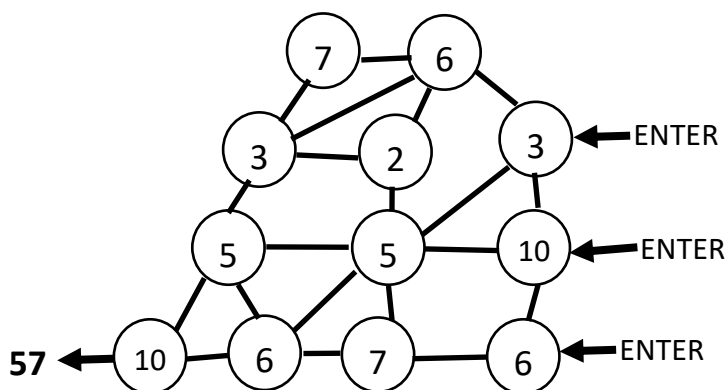
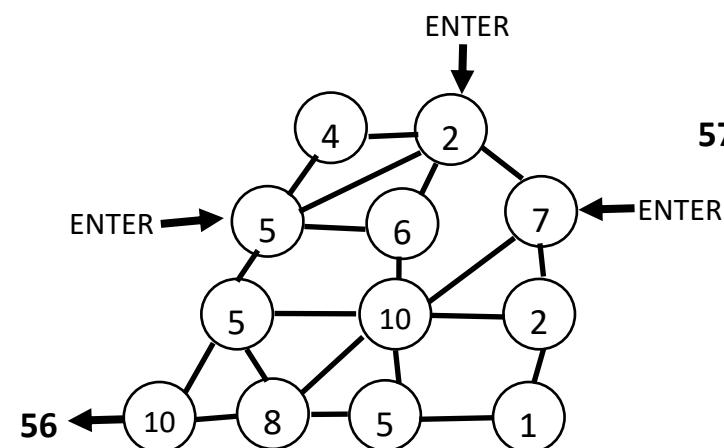
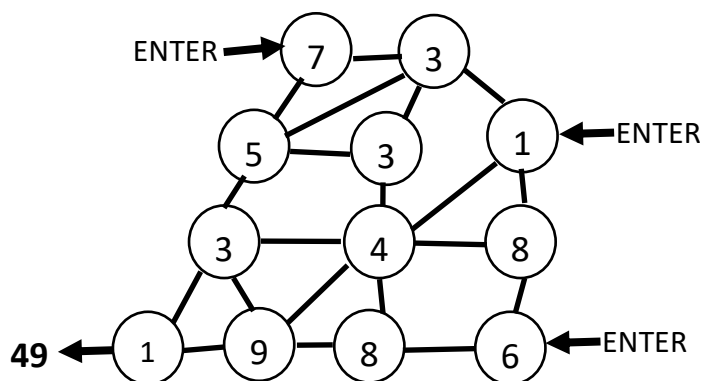
- The first, third and fourth cards are prime numbers
- The fifth and eighth cards are equal to the sixth card when multiplied together
- The third and sixth card add up to 15
- The second and fifth cards equal 12 when multiplied together

F: Cards 1 2 3 4 5 6 7 8 9

- The first and second cards add up to 16 with the smaller card being on the left
- The fifth and ninth cards equal 15 when multiplied together
- The 6 is on the right of the 1 but left of 3
- The fourth and seventh equals 24 when multiplied together
- The third and fifth add up to 4

BUBBLE MAZES

You have a choice of three entries into the maze. You can visit the bubbles only once. The aim is to make





FIVE BY FIVE

You have five 1s, five 2s, five 3s, five 4s, five 5s

Place them in the grid so they are not repeated in any row, any column or the two long diagonals

There is an answer on page 8. Check your pattern carefully if it does not match the solution. You may another correct pattern

CONSECUTIVE NUMBERS

The clues are the total of the consecutive numbers e.g. 456. They may not be written in order e.g. 3456 could be written as 5346 or 3645 etc.

1	2		3	4	
3		6		7	
		8	9		
	10				
11			12	13	14
	15			16	

ACROSS

DOWN

1 5

1 3

3 5

2 5

5 6

4 9

7 9

6 6

8 6

9 12

10 12

10 12

11 11

13 7

12 12

14 9

15 7

16 9

1	2		3		
	4				5
			6	7	
8		9			
		10			
	11			12	

ACROSS

DOWN

1 9

2 9

3 3

3 6

4 9

5 7

6 12

7 18

8 12

8 5

10 18

9 12

11 5

12 9





COUNTING DOWN!

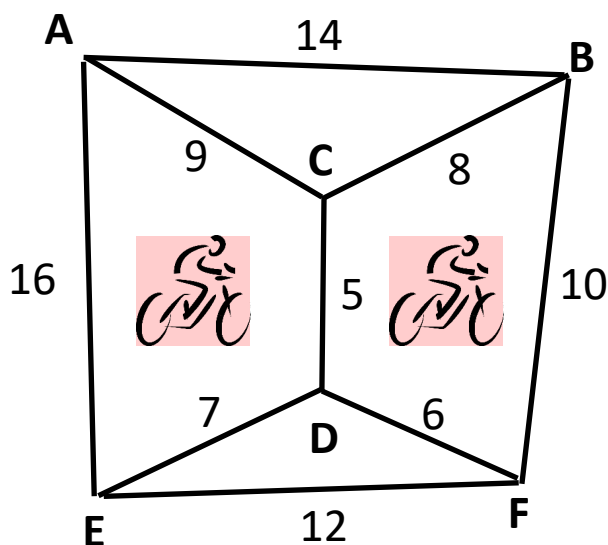
Make the total on the left - you do not have to use all the numbers.

You can only use the operations addition, multiplication, subtraction and division.

	25	7	4	6	3	9	222
Ans:							
	75	3	2	5	7	8	167
Ans:							
	50	3	1	4	6	7	442
Ans:							
	100	4	1	9	1	5	437
Ans:							
	25	1	4	3	4	7	262
Ans:							

CURLY'S CYCLING FRIENDS

Work out the route Curly's friends made.



Ann	B			A			38 _{km}
Bill	A				D		33 _{km}
Carol	D				B		40 _{km}
Dave	F					B	46 _{km}
Erin	C					B	48 _{km}





LETTERED DICE

Each face on the 4 dice has a different letter on it. By rearranging them you can make the following words. Work out which letter belongs to which dice

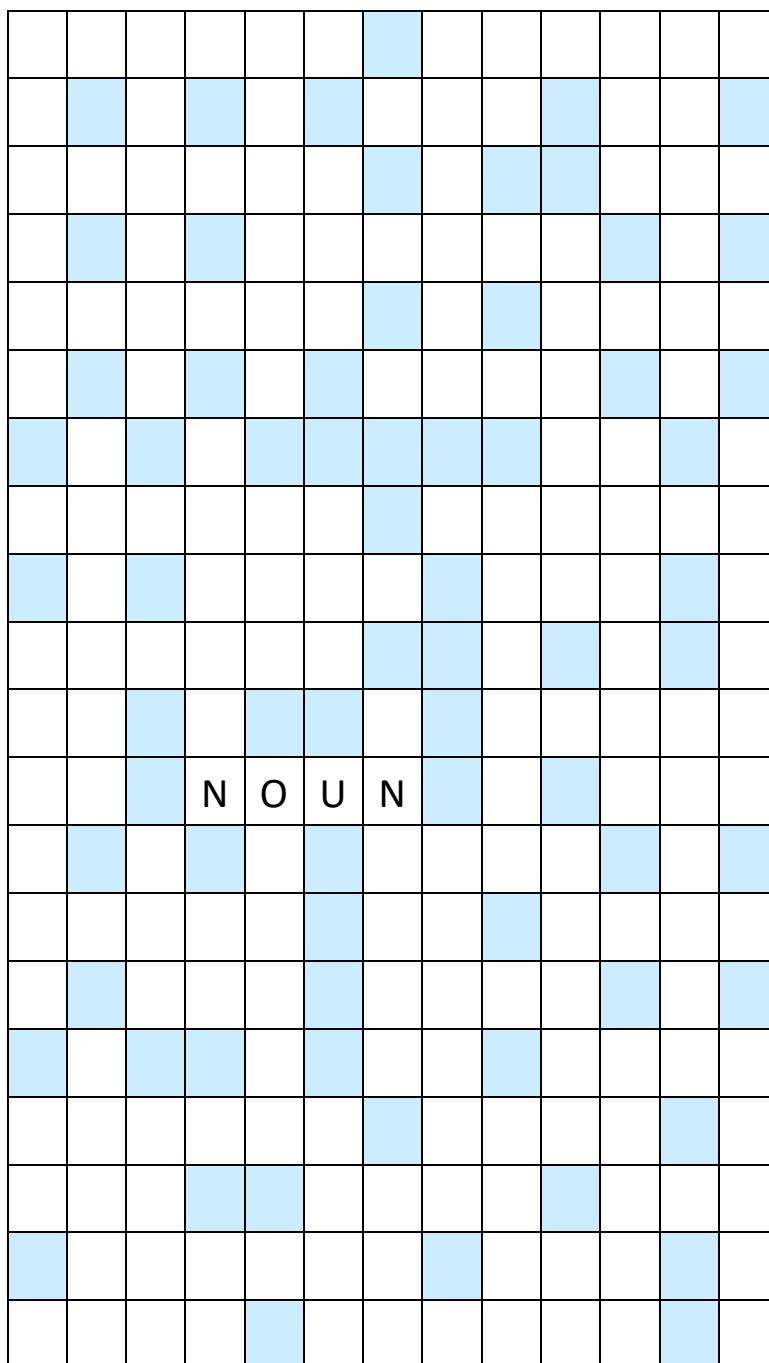
BONE CATS COAT CORN
FIVE FOUR FROG GOAT
GROW HIVE ICON JACK
JAKE JAYS KATE LATE
LEFT MOAT MOTH NOTE
PINE QUIP QUOD RACK
TONE **No x or z**

DICE 1	DICE 2	DICE 3	DICE 4
A	A	A	A
B	B	B	B
C	C	C	C
D	D	D	D
E	E	E	E
F	F	F	F
G	G	G	G
H	H	H	H
I	I	I	I
J	J	J	J
K	K	K	K
L	L	L	L
M	M	M	M
N	N	N	N
O	O	O	O
P	P	P	P
Q	Q	Q	Q
R	R	R	R
S	S	S	S
T	T	T	T
U	U	U	U
V	V	V	V
W	W	W	W
Y	Y	Y	Y

DICE 1	DICE 2	DICE 3	DICE 4

FILL IT IN!

With the exception of one, all the words have been removed from this crossword. The aim is to return all the data to make a complete version



AN APE SIR AIRY REAP BELLE AMENDS LEGMEN ROUNDS
AT ASS SON ASPS SEAT BRERS ARROWS LISTEN SCROLL
AW DOL NEE AUNT SLAP SALAS CREASE OUTLAW SEPALS
EM EGO TEN AUTO USED TOAST DASHES PEPPER SNEEZE
EM EWE TOR DUST ZEAL EASELS PLUNGE TAPPED
EN PAD EATS EMPIRE POWDER TONGUE
HE PEA LESS FAINTS QUARTS TORCH
IS POW NOUN FRYING QUESTS UTTER
WE SAG PETS GORGED RABBIT
LEDGES RAGBAG





FIND THE FIVE DIGITS

Look for the fifteen five-digit numbers in the grid below.

The numbers can be written horizontally, vertically or diagonally

13247 14232 15693 23549 25946 34324 38926 44217 45619 48225
49614 51272 57918 62898 69158 71317 74251 85494 93513 98322

4	7	6	1	7	1	1	5	1	2	7	2	2	1	6	4	2	1	4	6
2	1	8	6	4	2	2	7	9	5	4	9	7	2	9	7	5	8	1	8
4	8	5	7	3	5	1	8	6	9	1	3	4	7	1	2	4	1	3	3
2	9	8	3	2	2	6	6	8	6	8	1	1	2	5	8	7	8	2	9
6	3	6	5	7	5	7	1	9	8	1	4	4	8	8	2	2	3	4	7
1	4	5	8	4	5	1	1	9	1	7	4	9	7	4	5	9	3	7	4
5	4	3	4	8	9	6	4	4	8	9	6	2	6	1	4	8	6	2	5
3	7	6	3	8	3	4	5	9	1	2	4	2	3	4	3	5	6	4	2
9	6	6	4	8	1	8	3	5	5	6	8	9	8	2	6	5	5	9	2
7	2	8	6	3	8	9	2	6	8	3	8	2	5	5	5	1	8	2	8
1	9	5	3	2	6	2	3	6	6	3	5	9	9	7	3	9	9	1	4
6	2	5	9	8	6	5	6	9	7	9	9	2	9	2	9	8	3	1	4
8	9	9	9	4	2	2	6	9	1	5	7	8	2	7	2	1	3	9	4
4	4	3	4	2	6	6	7	9	3	2	4	2	7	4	6	4	8	6	3
5	5	9	5	2	7	9	1	3	1	9	9	7	5	2	1	6	5	7	8
6	3	2	9	6	9	9	6	8	7	2	9	7	9	9	2	4	8	1	1
4	2	3	8	3	7	7	9	1	3	5	4	1	2	5	9	3	7	2	9
3	8	1	4	7	1	1	6	8	2	2	8	8	2	6	3	6	6	3	5
8	1	5	6	9	3	4	5	8	5	7	1	9	1	5	3	1	5	7	3
9	9	6	2	9	7	7	4	1	4	5	8	4	5	4	2	1	9	9	2
7	9	8	9	1	3	1	1	6	4	1	3	3	3	5	3	1	7	6	3

HIDDEN WORDS

In each line of letters there are three hidden words. Find them.

Oceans A A A A C C C D F I I I I L N N N P T T

Countries A A A C E F G I L N N O P P R R S T U

Sports A B C E E F H I K L L N N O O O S T T Y

Fruits A A A C C E E E G I I N N N O O P R R R T T

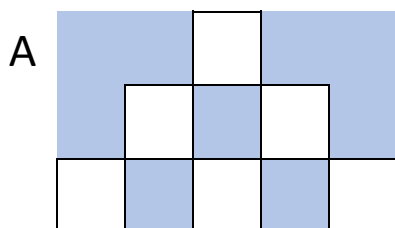
Shapes A A B C D E E G H I L M M N O P R R S T T U Y



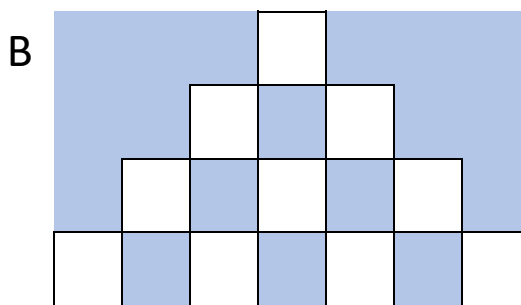


CONNECTING PYRAMIDS

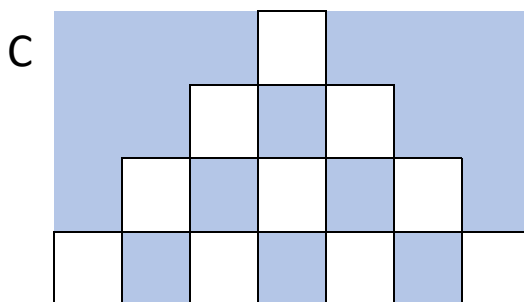
Place the numbers in each pyramid
so when you add or subtract two numbers the result above them is correct.
The sums must read from left to right. E.g. $9 - 8 = 1$



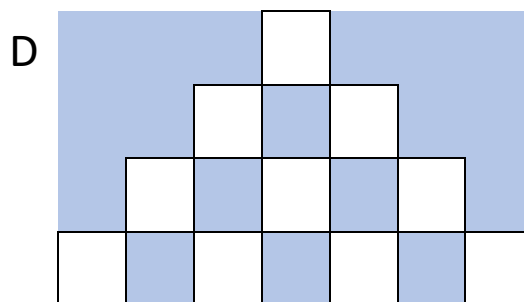
1 2 3 3 5 8



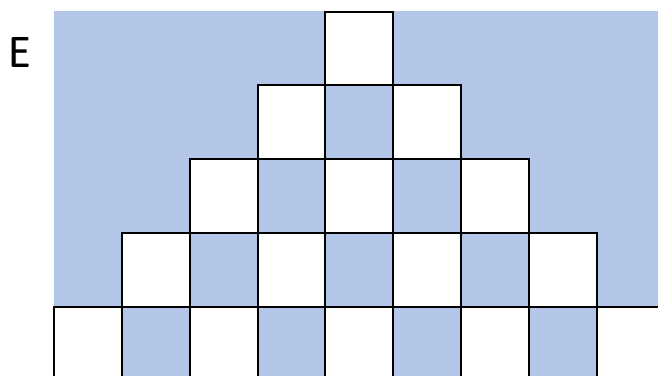
1 1 1 2 2 2 3 3 3 5



1 2 2 3 4 4 5 6 9 15



1 2 2 2 3 3 4 4 5 7



1 1 1 2 2 3 3 4 4 5 6 7 7 8 9

SOLUTIONS

COUNTING DOWN AND MAKE 24: there are many combinations. Ask somebody to check them or use a calculator **CROSS NUMBERS:** 43,21; 32, 41; 42,13; 362,451; 642,531; 124,635;352,614 **ORDERING CARDS:** 4312 / 24513 / 352164 / 6327451 / 36752814 / 791638425 **BUBBLE MAZES:** 1,8,6,8,4,9,3,10; 10,6,7,5,3,6,2,3,5,10; 2,6,10,7,2,1,5,8,5,10 **CURLY CYCLING:** BFEA, ACBFD, DEAC, FDEACB, CAEDFB **LETTERED DICE:** BDIJRT, KLOPSV, AFHNQW, CEGMUY **HIDDEN WORDS:** France, Portugal, Spain; football, hockey, tennis; apricot, nectarine, orange; pyramid, rectangle, rhombus; Atlantic, Indian, Pacific

FIVE BY FIVE					CONSECUTIVE NUMBERS										CONNECTING PYRAMIDS														
A	B	C	D	E	2	3		2	3		4	5		1	2		8												
D	E	A	B	C	1	2	3		4	5			4	3	2			3	5		2		5		3		1		
B	C	D	E	A			1	3	2						3	5	4					1							
E	A	B	C	D		3	2	4				3	5	4		3													
C	D	E	A	B	6	5		5	3	4		2		5	7	6													
						4	3		4	5			2	3		4	5												

