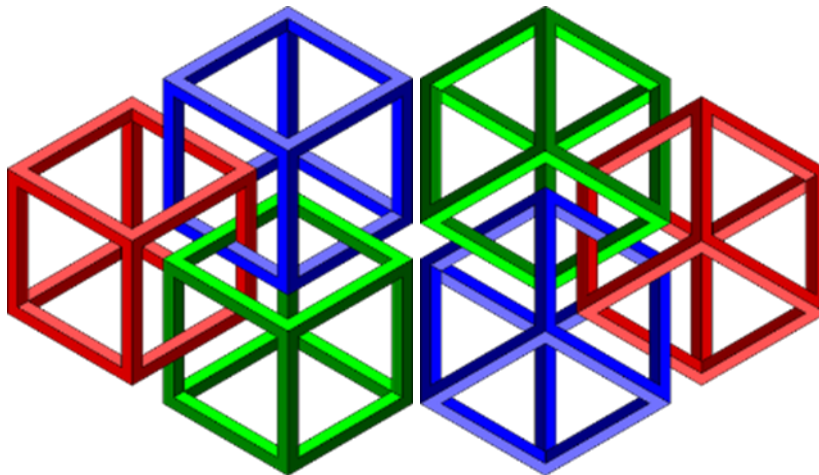




MATHS PUZZLE BOOK

VOLUME FIVE

= for keen puzzlers aged 11 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





FILL IT IN!

Place the list of numbers on the right hand-side into the grid.

		9					
		9					
		3					

14	74	541	1414
23	82	618	1946
38	85	649	1964
52	92	675	3255
55	96	692	3556
59	98	766	9487
66	195	855	
71	516	993	

DITLOIDS

With the information given work out the expressions.

5 F on your H = 5 **fingers** on your **hand**

200 P- for P- G- in M-

1 W- on a U-

7 S- on a F- P- P-

57 H- V-

3 B- M- (S- H- T- R-)

11 P- in a F- T-

13 L- in a B- D-

29 D- in F- in a L- Y-

24 H- in a D-

64 S- on a C- B-

SIX LETTER WORDS

Rearrange the two-letter pieces to make six sensible 6-letter words

ky	ja	br	ch	yf	jo
wi	le	ul	et	rd	on
zz	za	ze	ch	pu	al





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.

8	11	14	6	
2	13	6	15	
3	3	3	10	
8	6	13	3	
15	1	1	8	

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.*

FOUR CARDS = 1 2 3 4

The even numbers are not next to each other.

The 4 is next to and on the left of the 1.

The middle two cards add up to 3.

FIVE CARDS = 1 2 3 4 5

The first and second cards add up to 7 as does the fourth and fifth cards.

The 5 is to the left of the 3.

The 4 is to the right of 1.

The first, the third and the fifth cards add up to 7.

SIX CARDS = 1 2 3 4 5 6

The first and third cards add up to 5 as does the fourth and sixth cards.

When multiplied together the second and fifth cards equal 30.

The 1 is next to and to the right of the 2.

SEVEN CARDS = 1 2 3 4 5 6 7

The first two cards add up to 10 and the last two cards add up to 8.

The 2 is two places away from the 3.

The 7 is to the right of 5.

The 4 is next to the 2.

The 6 is five places away from the 7.

EIGHT CARDS = 1 2 3 4 5 6 7 8

When multiplied together the first two cards equal 24.

The last two cards equal 4 when multiplied together.

The 8 is four places away from the 5.

The 2 is two places away from the 6.

The 1 is three places away from the 7.

When multiplied together the third and sixth cards equal 30.





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

AMIR	ARCH	BAND	BARE
COLT	CHOP	CLAY	FLED
JOWL	KIND	KNOB	LOAM
SNIP	THOU	VIEW	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

BROKEN CALCULATORS

You have to use all the available keys, and only ONCE, to make the total





ADDING PAIRS

From the list of numbers find pairs which add up to the totals as shown

40	27	31	36	49

5 15 22 25 7 16 20 21 24 26

64	46	63	26	43	41	42

21 25 30 31 32 34 11 12 14 15 17 26 28 29

28	43	57	59	60

13 15 18 19 25 26 28 29 31 33

56	60	40	48	56	60

17 19 21 23 25 26 27 29 31 33 34 35 35

ANAGRAMS

shoelace torch	person at school
lawn tooters	fun tourist attraction
thor lamp woven	UK city
natures tar	eating place
toll urchins winch	famous UK statesman
lizards went	European country
So gunned	dark room
ice hymns	fire and smoke
a stem too	salad item
right fan	old coin
Erhart Porty	famous fictional character
trendiest gown	place in London





CATCH THE TRAIN

Answer the questions about this timetable

Reading	⑦ d	1504	1528	1604	1632	1651	1704	1732	1804
Wokingham	d	1513	1539	1613	1641	1701	1713	1741	1813
Crowthorne	d	1518	1544	1618	.	1706	1718	1746	1818
Sandhurst	d	1522	1548	1622	.	1710	1722	1749	1822
Blackwater	d	1525	1551	1625	1649	1713	1725	1753	1825
Farnborough North	d	1530	.	1630	.	1718	1730	.	1830
North Camp	d	1534	1558	1634	1655	1722	1734	1759	1834
Ash	③ d	1538	.	1638	.	1726	1738	.	1838
Wanborough	d	.	.	1642	.	.	1742	.	.
Guildford	⇄ a	1547	1609	1649	1708	1735	1749	1810	1847
Guildford	⇄ d	1548	1610	1650	1709	1736	1750	1811	1850
Shalford	d	1553	.	1655	.	1741a	1755	.	1855
Chilworth	d	1557	.	1659	.	.	1759	.	1859
Gomshall	d	1604	.	1706	.	.	1806	.	1906
Dorking West	⇄ d	1611	.	1713	.	.	1814	.	1913
Dorking Deepdene	⇄ d	1613	1628	1716	1726	.	1816	1828	1916
Betchworth	d	1618	.	1721	.	.	1821	.	1921
Reigate	⇄ d	1623	1636	1726	1734	.	1826	1835	1926
Redhill	⇄ a	1627	1640	1732	1740	.	1830	1839	1932
Gatwick Airport	⇄ ⇄ ☺ a	.	1652	.	1751	.	.	1850	.

- I leave Crowthorne to Betchworth on the 1618. How long did the journey take (in minutes)?
- Instead of leaving Reading at 1504 I took the 1528 train to Redhill. How many minutes less is my train journey compared to the 1504?
- I leave Sandhurst at 1722 and arrive in Ash to visit my Granny for an hour. What is the earliest time I will get to Redhill?
- I left Blackwater to go to Blackwater on the 1713 and found I made a mistake when I arrived in Guildford. What time can I expect to arrive at Gatwick now?
- Which is the quickest train from Reading to Gatwick?

COUNTING DOWN!

Similar to "Make 24" but you do not have to use all the numbers. You can only use the simple operations addition, multiplication, subtraction and division

	50	3	4	7	5	6	277
Ans:							
	75	4	3	4	3	2	136
Ans:							
	25	7	7	8	2	3	448
Ans:							
	50	2	7	4	6	5	245
Ans:							
	100	5	9	7	3	6	172
Ans:							



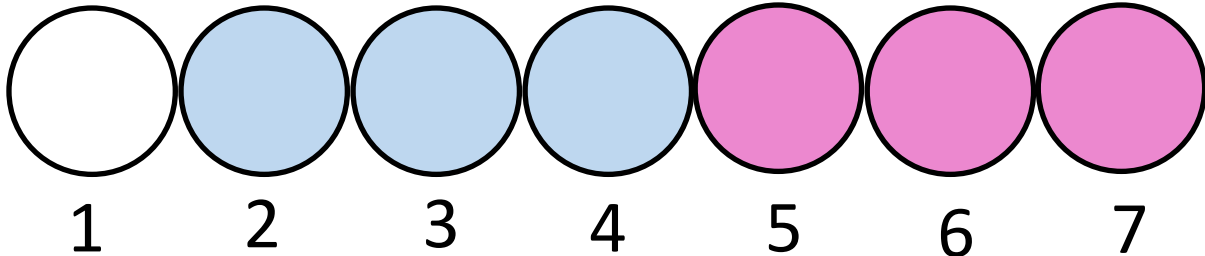


JUMPING COUNTERS

The aim is to move the pink counters into positions 1, 2 and 3 and the blue counters to 4, 5 and 6 leaving position 7 empty. The counters can jump to the next circle if it is unoccupied, or move one or two counters to an unoccupied circle. They can jump in either direction.

Example: 4 to 1, 5 to 4, 3 to 5, 6 to 3. It is possible to do it in 10 moves.

Counters can be purchased cheaply from [EBAY](https://www.ebay.com) for less than £2.50 including postage.



PUZZLES

PUZZLE ONE: You do not need dice to solve this puzzle. When you throw an even number you add 2 plus the number on the dice ($2 + 4 = 6$) and if you throw an odd number you subtract 1 and add the number on the dice ($3 - 1 = 2$)

What is my result if I throw the following: 6 4 5 4 3 5 2

PUZZLE TWO: My dear frog fell down a 12 metre well. During the day he could climb 3 metres but at night he slips down 2 metres. How many days will it take the frog to get out of the well?

PUZZLE THREE: Rearrange the following values and pair them up to make square numbers when added. A square number is the result of multiplying a number by itself: 9 is a square number because it is the result of 3×3 .

3 4 5 6 10 12 15 31

PUZZLE FOUR: Small oranges cost 8p each and the large ones cost 13p each. I bought some oranges and I paid £1. How many small and how many large oranges did I buy?

PUZZLE FIVE: Find two numbers which add up to 33 and when multiplied together the answer is 200.

SOLUTIONS

DITLOIDS: 200 Pounds for Passing Go in Monopoly, 7 Sides on a Fifty Pence Piece, 3 Blind Mice (See How They Run), 13 Loaves in a Bakers Dozen, 24 Hours in a Day, 1 Wheel on a Unicycle, 57 Heinz Varieties, 11 Players in a Football Team, 29 Days in February in a Leap Year, 64 Squares on a Chess Board **SIX LETTER WORDS:** bronze, chalky, jacket, joyful, puzzle, wizard **COUNTING DOWN AND MAKE 24:** there are many combinations. Ask somebody to check them or use a calculator **ORDERING CARDS:** Four 4123, Five 25134 Six 352164 Seven 642537 1 Eight 38672514 **LETTERED DICE:** AFKPTW, CEJMNU, BGHILQ, DORSVY **BROKEN CALCULATORS:** $36 + 47 = 83$ (plus other combinations), $105 - 26 = 79$, $4 + 5 \times 16 = 144$, $18 \div 3 \times 20 = 120$, $2 \times 6 + 40 \div 5 = 20$, $278 + 435 = 713$ (plus other combinations) **ADDING PAIRS:** 25 15, 5 22; 7 24, 20 16, 28 21; 30 34, 21 25, 31 32; 11 15, 17 26, 29 12, 28 14; 13 15, 18 25, 29 28, 33 26, 19 31; 27 29, 35 25, 21 19, 31 17, 23 33, 34 26 **ANAGRAMS:** school teacher, Alton Towers, Wolverhampton, restaurant, Winston Churchill, Switzerland, dungeon, chimneys, tomatoes, farthing, Harry Potter, Downing Street **CATCH THE TRAIN:** 63 minutes, 11 minutes, 19:32, 18:50, 17:32 **PUZZLES:** 34; 9 days; 3 6, 4 12, 5 31, 10 15; 6 small 4 large; 8 and 25

