VIC SKEPTICS

Logic and Maths Puzzles 100 November 2020

1.

	Coles	Woolworths	Aldi	IGA	Dip	Pretzels	Nuts	Cheese
First								
Second								
Third								
Fourth								
Dip								
Pretzels								
Nuts								
Cheese								

Linda is catering for a party, but has a strict budget.

Fortunately, her local shopping centre has her four "must have" items, (Dip, Pretzels, Nuts and Cheese cubes) each on special at a different store (Coles, Woolworths, Aldi and IGA in some order).

From the following information, work out which item was purchased at which store, and the order in which they were purchased.

(i) By the time Linda had bought the pretzels, she already had the cheese but hadn't yet entered the Aldi store.

(ii) She entered the IGA store with the nuts already bought, but had yet to visit the Coles store.

2.

Figure It Out

Tuesday's high temperature was 4 degrees Celsius warmer than that of Monday's.

Wednesday's high temperature was 6 degrees Celsius cooler than that of Monday's.

If Tuesday's high temperature was 22 degrees Celsius, what was Wednesday's high temperature?

3.

Figure It Out

I bought a bread roll for lunch at the bakery. I then went to the fruit shop next door and bought a banana. The total cost was $3.30.
If the roll cost me $3 more than the banana, what did the banana cost?

4. *RECIPE ROUNDUP*

The website ***Recipe Roundup*** features one new recipe each day. Recipes are contributed by subscribers, some of whom are regular contributors whose posts can be recognized by their avatars.

From the clues, work out who contributed the recipe on each day Monday to Friday last week; their full names, the recipe they contributed and the avatar they use online.

The recipes, in no particular order, were for Dandelion Soup, Worm Salad, Mustard Sponge, Prawn Custard and Seaweed Sprinkles.
First names were Val, Wally, Xavier, Yvonne and Zac.
Surnames were Adams, Butler, Collins, Dean and Everard.
Avatars were: a bowl; a chef's hat; a fork; a saucepan; and a spoon.

(i) Monday's recipe didn't come from Collins and didn't have the Bowl avatar.

(ii) Zac Adam's recipe wasn't for Dandelion soup.

(iii) Butler posted Thursday's recipe. It wasn't for Mustard Sponge.

(iv) The Chef's Hat was seen later in the week than Xavier's post, and one day earlier than Everard's, but it didn't accompany Thursday's recipe.

(v) The Mustard Sponge recipe was featured the day after Wally's and the day before the one for Worm Salad.

(vi) The Spoon avatar was seen the day after the Seaweed Sprinkles recipe and the day before the recipe accompanied by the Fork avatar (which isn't the avatar Yvonne uses)

The following table may be useful in solving this puzzle.

Day	First name	Surname	Recipe	Avatar
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				

5.

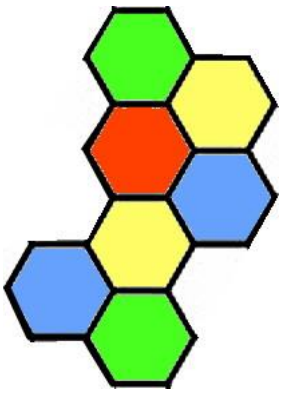
Big Deal

Seven cards have been dealt face up.

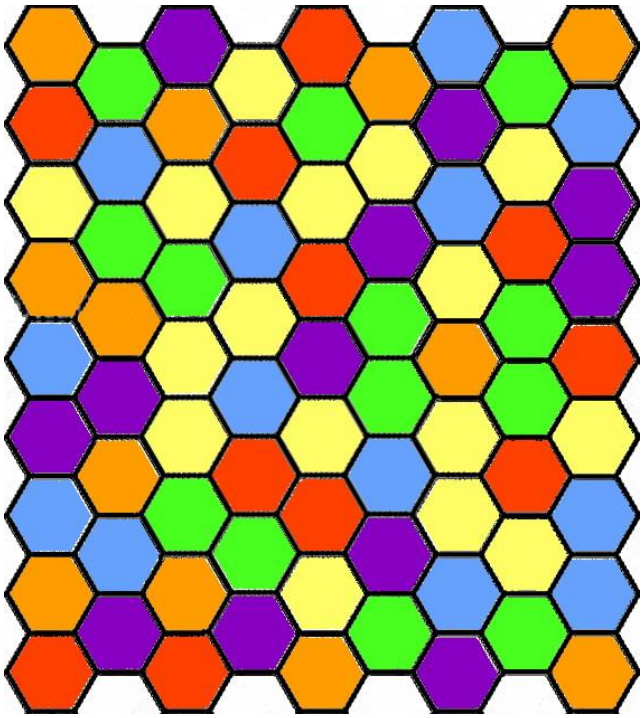
Identify the first, third and fifth cards to be dealt.

6.

Pattern Poser



How many examples of this pattern are contained in the net on the right? The pattern can be rotated but not reflected.



7. FIVE QUICK QUESTIONS

(a) What is the greatest number of Mondays that can occur between January 1st and February 14th of any year?

(b) An ant carries 1 crumb on the first day and 1 crumb on the second day. On the third day it carries 2 crumbs, on the fourth day it carries 3 crumbs. On day five it carries 5 crumbs and on day six it carries 8 crumbs. According to this sequence, how many crumbs will the ant carry on the seventh day? Write your answer as a numeral.

(c) How many legs are there altogether on 2 spiders and 3 crickets?

(d) Six female dogs have 4 puppies each. Half of these puppies are female and grow up to also have 4 puppies each. How many dogs are there in total?

(e) At a local farm there are 20 animals altogether. The interesting thing is that there only chickens and donkeys. The farmer counts the legs and finds that there are 52 legs in total (not including his own). How many chickens are on the farm?

8.

A farmer keeps only four types of animals; he has a total of 560 animals.

If he had ten sheep less, he would have twice as many sheep as he has cows.

If he had ten cows less he would have three cows for every pig, and he has two-and-one-half pigs to every horse.

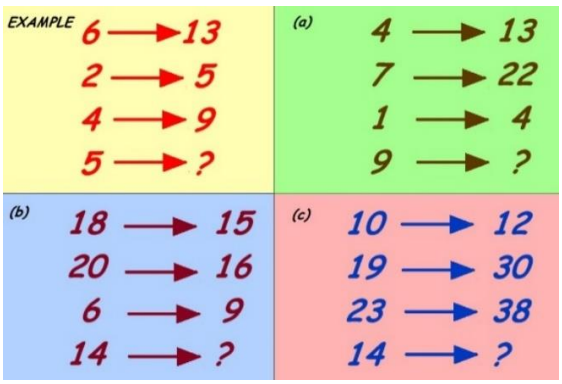
a. How many pigs does he have?
b. How many horses does he have?
c. If he swaps 75% of his cows for seven sheep per cow, how many animals will he have in total?

9. $\Sigma a^b \times \int \pi / e \geq \infty$ *Cracking the formulae*

In each of the four sets below, the numbers on the left have been turned into the numbers on the right by applying the same formula. A different formula applies from set to set.

In the example, each number on the left has been turned into the number on the right by multiplying by 2 then adding one. The answer (the number that replaces the question mark) is therefore
5 x 2 + 1 =**11**

Find the answer for each of the other three sets.



10. Place each of the whole numbers from 1 to 36 into its correct square in the 6 X 6 grid below, using the fourteen clues supplied. You may want to tick off each number as you locate it.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						

1. Each number in row 1 is evenly divisible by C1.

2. Each row 2 number is a multiple of five.

3. Each number in row 3 has the digit 1.

4. Row 4 contains three single-digit numbers, one of which evenly divides into both D5 and F6

5. All the numbers in row 5 are even.

6. All the numbers in row 6 are odd.

7. Each number in column A has the digit 3.

8. The sum of all the numbers in column C is 21.

9. Column E has six consecutive numbers in order from top to bottom.

10. The sum of all the numbers in column A minus the sum of all the numbers in column F = D6

11. The sum of the four corner numbers is 138.

12. B1 is one greater than B3 and two greater than D2.

13. C5 is the square root of F1, which is three times greater than B4 and four times greater than D4

14. F5 is evenly divisible by B5

Answers: (worked solutions begin on the next page.)

1. The nuts were purchased first at Woolworths.

   The cheese was purchased second at IGA

   The pretzels were purchased third at Coles

   The dip was purchased fourth at Aldi

2. 12^0C

3. The banana cost 15c [NOT 30c!]

4. Monday, Xavier Dean, Dandelion Soup, Saucepan

   Tuesday, Wally Collins, Seaweed Sprinkle, Chef's Hat

   Wednesday, Yvonne Everard, Mustard Sponge, Spoon

   Thursday, Val Butler, Worm Salad, Fork

   Friday, Zac Adams, Prawn Custard, Bowl

5. 1st: Queen of diamonds; 3rd: Ace of Clubs; 5th: Seven of Clubs

6. Four times

7. (a) 7 (b) 13 (c) 34 (d) 78 (e) 14

8. a. 50 pigs b. 20 horses c. 1,280 animals

9. a. 29 number x 3 + 1
   b. 13 number ÷ 2 + 6
   c. 20 (number - 4) x 2

10.

	A	B	C	D	E	F
1	34	22	2	26	14	36
2	30	10	5	20	15	25
3	13	21	1	31	16	11
4	23	12	4	9	17	7
5	32	8	6	28	18	24
6	33	29	3	27	19	35

SOLUTIONS:

1. Applying Clue (i): By the time Linda had bought the pretzels, she already had the cheese but hadn't yet entered the Aldi store.

	Coles	Woolworths	Aldi	IGA	Dip	Pretzels	Nuts	Cheese
First			X			X		
Second			X					
Third								X
Fourth						X		X
Dip								
Pretzels			X					
Nuts								
Cheese			X					

Applying clue (ii): She entered the IGA store with the nuts already bought, but had yet to visit the Coles store.

	Coles	Woolworths	Aldi	IGA	Dip	Pretzels	Nuts	Cheese
First	X		X	X		X		
Second	X		X					
Third							X	X
Fourth				X		X	X	X
Dip								
Pretzels			X					
Nuts								
Cheese			X					

From the above table,
The only candidate for the first store visited is Woolworths. That will leave IGA as the second store visited.

The only candidate for the last object purchased is dip; that will leave the third object purchased as Pretzels

	Coles	Woolworths	Aldi	IGA	Dip	Pretzels	Nuts	Cheese
First	X	✓	X	X	X	X		
Second	X	X	X	✓	X	X		
Third		X		X	X	✓	X	X
Fourth		X		X	✓	X	X	X
Dip								
Pretzels			X					
Nuts								
Cheese			X					

The pretzels weren't bought at Aldi; they must have been bought at Coles, so Coles is the third store visited and by elimination Aldi was the fourth and last store visited, where the dip was purchased. As Linda bought the nuts before entering the IGA store, the nuts were purchased first and the cheese second.

	Coles	Woolworths	Aldi	IGA	Dip	Pretzels	Nuts	Cheese
First	X	✓	X	X	X	X	✓	X
Second	X	X	X	✓	X	X	X	✓
Third	✓	X	X	X	X	✓	X	X
Fourth	X	X	✓	X	✓	X	X	X
Dip	X	X	✓	X				
Pretzels	✓	X	X	X				
Nuts	X	✓	X	X				
Cheese	X	X	X	✓				

2. If Tuesday's temperature was 22 degrees, Mondays was 18 degrees. Wednesday's temperature was therefore 12 degrees.

3. If the banana cost b cents, then the roll cost (b + 300) cents.

Cost of banana + cost of roll = total cost

b + (b + 300) = 330

2b + 300 = 330

2b = 30

b = 15

4. One approach is to list all possibilities in the table, then to eliminate them using the clues provided.
Clue (i) and (iii) can be applied directly, and it then follows from Clue (ii) that as Zac is Adams (not Butler), his recipe did not feature on Thursday.

Day	First name	Surname	Recipe	Avatar
Monday	V W X Y Z	A ~~B~~ ~~C~~ D E	DANDELION SOUP WORM SALAD MUSTARD SPONGE PRAWN CUSTARD SEAWEED SPRINKLE	~~Bowl~~ Chef's Hat Fork Saucepan Spoon
Tuesday	V W X Y Z	A ~~B~~ C D E	DANDELION SOUP WORM SALAD MUSTARD SPONGE PRAWN CUSTARD SEAWEED SPRINKLE	Bowl Chef's Hat Fork Saucepan Spoon
Wednesday	V W X Y Z	A ~~B~~ C D E	DANDELION SOUP WORM SALAD MUSTARD SPONGE PRAWN CUSTARD SEAWEED SPRINKLE	Bowl Chef's Hat Fork Saucepan Spoon
Thursday	V W X Y ~~Z~~	~~A~~ B ~~C~~ ~~D~~ ~~E~~	DANDELION SOUP WORM SALAD ~~MUSTARD SPONGE~~ PRAWN CUSTARD SEAWEED SPRINKLE	Bowl Chef's Hat Fork Saucepan Spoon
Friday	V W X Y Z	A ~~B~~ C D E	DANDELION SOUP WORM SALAD MUSTARD SPONGE PRAWN CUSTARD SEAWEED SPRINKLE	Bowl Chef's Hat Fork Saucepan Spoon

That leaves the following possibilities still in place

Day	First name	Surname	Recipe	Avatar
Monday	V W X Y Z	A D E	DANDELION SOUP WORM SALAD MUSTARD SPONGE PRAWN CUSTARD SEAWEED SPRINKLE	Chef's Hat Fork Saucepan Spoon
Tuesday	V W X Y Z	A C D E	DANDELION SOUP WORM SALAD MUSTARD SPONGE PRAWN CUSTARD SEAWEED SPRINKLE	Bowl Chef's Hat Fork Saucepan Spoon
Wednesday	V W X Y Z	A C D E	DANDELION SOUP WORM SALAD MUSTARD SPONGE PRAWN CUSTARD SEAWEED SPRINKLE	Bowl Chef's Hat Fork Saucepan Spoon
Thursday	V W X Y	Butler	DANDELION SOUP WORM SALAD PRAWN CUSTARD SEAWEED SPRINKLE	Bowl Chef's Hat Fork Saucepan Spoon
Friday	V W X Y Z	A C D E	DANDELION SOUP WORM SALAD MUSTARD SPONGE PRAWN CUSTARD SEAWEED SPRINKLE	Bowl Chef's Hat Fork Saucepan Spoon

Now apply clue (iv). The Chef's Hat featured a day earlier than Everard's recipe so it didn't appear on Friday; but the clue says it didn't appear on Thursday either. Since the Chef's Hat was later than Xavier's, it didn't appear on Monday; the Chef's hat could only have appeared on Tuesday or Wednesday; Everard's recipe could only have been posted on Wednesday or Thursday.
But BUTLER's recipe was the one posted on Thursday; So Everard's recipe was posted on Wednesday, and the Chef's Hat appeared on Tuesday
Xavier's recipe must have appeared on Monday.
Zac is Zac Adams. Not Xavier Adams, so Xavier can only be Dean
Zac is Zac Adams, not Zac Everard, so Zac is not Wednesday's recipe poster.

Day	First name	Surname	Recipe	Avatar
Monday	Xavier	Dean	DANDELION SOUP WORM SALAD MUSTARD SPONGE PRAWN CUSTARD SEAWEED SPRINKLE	Fork Saucepan Spoon
Tuesday	V W Y Z	A C	DANDELION SOUP WORM SALAD MUSTARD SPONGE PRAWN CUSTARD SEAWEED SPRINKLE	Chef's Hat
Wednesday	V W Y	Everard	DANDELION SOUP WORM SALAD MUSTARD SPONGE PRAWN CUSTARD SEAWEED SPRINKLE	Bowl Fork Saucepan Spoon
Thursday	V W Y	Butler	DANDELION SOUP WORM SALAD PRAWN CUSTARD SEAWEED SPRINKLE	Bowl Fork Saucepan Spoon
Friday	V W Y Z	A C	DANDELION SOUP WORM SALAD MUSTARD SPONGE PRAWN CUSTARD SEAWEED SPRINKLE	Bowl Fork Saucepan Spoon

Now apply clue (v)
The Mustard Sponge came the day after Wally's recipe and the day before the Worm Salad recipe; so the Mustard Sponge featured on Tuesday or Wednesday. Wally's recipe was Monday's or Tuesdays.
But we've discovered that Monday's recipe came from Xavier Dean. (Not Wally)
So Wally's recipe came on Tuesday; the Mustard Sponge on Wednesday; and the Worm Salad on Thursday.
That leaves Zac Adams as the only possible candidate for Friday, and Wally is Wally Collins.

Day	First name	Surname	Recipe	Avatar
Monday	Xavier	Dean	DANDELION SOUP PRAWN CUSTARD SEAWEED SPRINKLE	Fork Saucepan Spoon
Tuesday	Wally	Collins	DANDELION SOUP PRAWN CUSTARD SEAWEED SPRINKLE	Chef's Hat
Wednesday	V Y	Everard	MUSTARD SPONGE	Bowl, Fork Saucepan Spoon
Thursday	V Y	Butler	WORM SALAD	Bowl Fork Saucepan Spoon
Friday	Zac	Adams	PRAWN CUSTARD SEAWEED SPRINKLE	Bowl Fork Saucepan Spoon

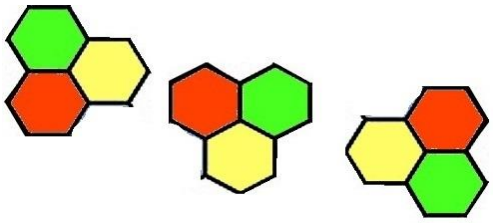
Now apply clue (vi)

The spoon avatar was seen the day after the Seaweed sprinkles recipe and the day before the fork avatar. The only possible remaining sequence of Sprinkles-Spoon-Fork on consecutive days is for Tuesday-Wednesday-Thursday.
The only remaining candidate for Monday's avatar is the Saucepan, so Friday's avatar is the Bowl.
The only remaining candidate for Friday's recipe is Prawn Custard, so Monday's recipe is Dandelion Soup.
From clue (vi), Yvonne doesn't use the Fork as an avatar, so her avatar is Wednesday's Spoon.
Val Butler remains as Thursday's recipe poster.

Day	First name	Surname	Recipe	Avatar
Monday	Xavier	Dean	DANDELION SOUP	Saucepan
Tuesday	Wally	Collins	SEAWEED SPRINKLE	Chef's Hat
Wednesday	Yvonne	Everard	MUSTARD SPONGE	Spoon
Thursday	Val	Butler	WORM SALAD	Fork
Friday	Zac	Adams	PRAWN CUSTARD	Bowl

5. The 6 of diamonds is not covered by any other card and is therefore the 7th and last card dealt. The 9 of hearts is ONLY partly covered by the 6 of hearts and is therefore the 6th card dealt; and so on.

6. Suggest looking for the presence in the larger net of a recurring pattern in a small number (2 or 3) of adjacent hexagons



and whenever found, see whether it extends to the entire array of seven hexagons.

7. (a) January 1st to February 14th represents 45 days inclusive, or 6 weeks and three days. If January 1st is a Monday, Tuesday or Wednesday, then seven Mondays will occur before Feb 15th.

7. (b) The sequence is such that on any day the ant carries a number of crumbs equal to the sum of the number of crumbs carried on the previous two days. On day six it therefore carries (8 + 5) = 13 crumbs.

7 (c)

$$(2 \times 8) + (3 \times 6) = 16 + 18 = 34$$

7 (d) First generation = 6
Second generation = 24.
Third generation = (12 X 4) = 48
Total = (6 + 24 + 48) = 78

7 (e) By quick trial-and-error:
1 donkey and 19 chickens have 40 legs between them.
5 donkeys and 15 chickens have 50 legs between them
6 donkeys and 14 chickens share 52 legs.

8. Trial & Error Method: (Made quicker by the fact that there are more sheep than cows; more cows than pigs; and more pigs than horses; and that the number of horses must be even; so it makes sense to base successive trials on a small but increasing number of horses.)

No. of horses (h)	No. of pigs (p=2.5 h)	No. of cows (c = 3p + 10)	No. of sheep (s = 2c + 10)	Total (target = 560)
2	5	25	60	92 (way too low)
10	25	75	160	270 (too low but about half-way there)
20	50	160	330	560 ✓

For 8 (c), given that the original number of cows is 160,
75% of 160 = 120. 120 cows swapped for sheep, 40 cows remaining.
7 X 120 = 840.
Total number of animals after the swap would be 20 horses + 50 pigs + 40 cows + (330 + 840) sheep = 1,280 animals.

9. (No solutions supplied; trial & error is a reasonable approach)

10. *Clue 13* is a good place to start. The only possible solutions are: C5 = 6, F1 = 36, B4 = 12 and D4 = 9.

Then *Clue 11*, the sum of the corner numbers = 138 is only true if those numbers are 33, 34, 35 and 36.

	A	B	C	D	E	F
1						36
2						
3						
4		12		9		
5			6			
6						

	A	B	C	D	E	F
1	33 34 35					36
2						
3						
4		12		9		
5			6			
6	33 34 35					33 34 35

Clue 6. All the numbers in row 6 are odd. That eliminates 34 as a possibility for A6 and F6, which means 34 can only belong in A1

Clue 8. The sum of all the numbers in column C is 21. Column C must contain all the numbers from 1 to 6

Clue 2. Each row 2 number is a multiple of five.C2 must be 5. C6, as an odd number must be 1 or 3.

	A	B	C	D	E	F
1	34					36
2						
3						
4		12		9		
5			6			
6	33 35					33 35

	A	B	C	D	E	F
1	34		1 2 3 4			36
2			5			
3			1 2 3 4			
4		12	1 2 3 4	9		
5			6			
6	33 35		1 3			33 35

Clue 3. Each number in row 3 has the digit 1. C3 must be 1. By elimination, C6 must be 3.

Clue 3. Each number in row 3 has the digit 1. *2.* Each row 2 number is a multiple of five.
Clue 9. Column E has six consecutive numbers in order from top to bottom.*6*. All the numbers in row 6 are odd. The only possible sequence of consecutive numbers for column E is 14 to 19.

	A	B	C	D	E	F
1	34		2 4			36
2			5			
3			1			
4		12	2 4	9		
5			6			
6	33 35		3			33 35

	A	B	C	D	E	F
1	34		2 4		14	36
2			5		15	
3			1		16	
4		12	2 4	9	17	
5			6		18	
6	33 35		3		19	33 35

Clue 3. Each number in row 3 has the digit 1. The remaining possibilities are now limited to 10, 11, 13, 21 and 31.
Clue 7. Each number in column A has the digit 3. *2*. Each row 2 number is a multiple of five. A2 must be 30

Clue 5. All the numbers in row 5 are even. The only candidate for A5 is 32
Clue 1. Each number in row 1 is evenly divisible by C1. Neither 14 nor 34 is evenly divisible by 4. C1 must be 2. By elimination, C4 is 4.

	A	B		C	D	E	F
1	34			2 4		14	36
2	30			5		15	
3	13 31	11 13 21 31		1	11 13 21 31	16	11 13 21 31
4	13 23 31 32	12		2 4	9	17	
5	13 23 31 32			6		18	
6	33 35			3		19	33 35

	A	B	C	D	E	F
1	34		2		14	36
2	30	10 20 25	5	10 20 25	15	10 20 25
3	13 31	11 13 21 31	1	11 13 21 31	16	11 13 21 31
4	13 23 31	12	4	9	17	
5	32		6		18	
6	33 35		3		19	33 35

Clue 4. Row 4 contains three single-digit numbers, one of which evenly divides into both D5 and F6. Row 4 already contains 4 and 9. Neither 4 nor 9 are evenly divisible into either of the possible numbers for F6, (33 and 35). The only remaining possibilities for the third single digit number in row 4 are 7 and 8.
8 is not evenly divisible into either 33 or 35, so the required third number for row 4 is 7 and F6 is 35. By elimination, A6 is 33. D5 can't be 21 as it's an odd number. D5 must be 28.

	A	B	C	D	E	F
1	34		2		14	36
2	30	10 20 25	5	10 20 25	15	10 20 25
3	13 31	11 13 21 31	1	11 13 21 31	16	
4	13 23 31	12	4	9	17	7
5	32		6		18	
6	33		3		19	35

	A	B	C	D	E	F
1	34		2		14	36
2	30	10 20 25	5	10 20 25	15	10 20 25
3	13 31	11 13 21 31	1	11 13 21 31	16	11 13 21 31
4	13 23 31	12	4	9	17	7
5	32		6	28	18	
6	33		3		19	35

The numbers 11, 13, 21 and 31 all belong in row 3. A4 must be 23.

Clue 12. B1 is one greater than B3 and two greater than D2.
If B3 is 11, B1 is 12 (not possible) and D2 is 10. B3 is not 11, D2 is not 10.
If B3 is 13, B1 is 14 (not possible) and D2 is 11 (not possible). B3 is not 13.
If B3 is 21, B1 is 22 and D2 is 20 (possible)
If B3 is 31, B2 is 32 (not possible) and D2 is 30 (not possible).
B3 is therefore 21, B1 is 22 and D2 is 20

	A	B	C	D	E	F
1	34		2		14	36
2	30	10 20 25	5	10 20 25	15	10 20 25
3	13 31	11 13 21 31	1	11 13 21 31	16	11 13 21 31
4	23	12	4	9	17	7
5	32		6	28	18	
6	33		3		19	35

	A	B	C	D	E	F
1	34	22	2		14	36
2	30	10 25	5	20	15	10 25
3	13 31	21	1	11 13 31	16	11 13 31
4	23	12	4	9	17	7
5	32		6	28	18	
6	33		3		19	35

Clue 14. F5 is evenly divisible by B5. F5 and B5 are both yet unassigned.
Unassigned numbers are 8, 10, 11, 13, 24, 25, 26, 27, 29 and 31.
11, 13 and 31 all belong in row 3. The only possible pair of numbers implicated are F5 is 24, divisible by B5 which is 8. The only unassigned even number now remaining, (apart from 10 which belongs in row B) is 26 which must be D1.
27 and 29 belong in row 6 in some order.

	A	B	C	D	E	F
1	34	22	2	26	14	36
2	30	10 25	5	20	15	10 25
3	13 31	21	1	11 13 31	16	11 13 31
4	23	12	4	9	17	7
5	32	8	6	28	18	24
6	33	27 29	3	27 29	19	35

Clue 10. The sum of all the numbers in column A minus the sum of all the numbers in column F = D6
The sum of all the numbers in column A is 165 if A3 is 13; or 183 if A3 is 31.

The sum of all the numbers in column F is
123 if F2 is 10 and F3 is 11 165 – 123 = 42 NO 183 – 123 = 60 NO
125 if F2 is 10 and F3 is 13 165 – 125 = 40 NO 183 – 125 = 58 NO
143 if F2 is 10 and F3 is 31 165 – 143 = 22 NO 183 – 143 = 40 NO
138 if F2 is 25 and F3 is 11 165 – 138 = 27 YES 183 – 138 = 45 NO
140 if F2 is 25 and F3 is 13 165 – 140 = 25 NO 183 – 140 = 43 NO
158 if F2 is 25 and F3 is 31 165 – 158 = 7 NO 183 – 158 = 25 NO

So A3 is 13, F2 is 25 and F3 is 11. D6 is 27.

By elimination, D3 is 31, B2 is 10 and B6 is 29

	A	B	C	D	E	F
1	34	22	2	26	14	36
2	30	10	5	20	15	25
3	13	21	1	31	16	11
4	23	12	4	9	17	7
5	32	8	6	28	18	24
6	33	29	3	27	19	35