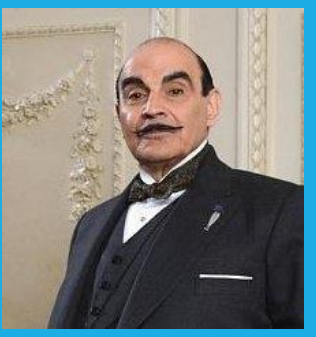
Kluedo Solution

Characters






Method




Room




Grid 1 : Victim / Method

Some entries have clues with multiple parts which are separated by a colon (:). In these cases solvers must decide which part has to be used and reject the red herring. An even digit in a cell gives a positive response in that that character could have died by that method. Whilst an odd digit means that it didn't happen. No entry starts with zero and all entries are distinct.

v / m	Co	El	Kn	Pn
Ho	A a		B b	c
Ma	C	d		
Po	e	D		f
Re	E		F	

Across

A 3F : 7F
B triangular
C prime : palindrome
D Fe – e : Ff – f
E triangular
F prime

Down

a triangular
b multiple of B : multiple of C
c square
d multiple of A : multiple of B
e B + c : B – c
f prime

The highlighted cell/s are the ones that lead to the solution.

In all of the grids it is the even digits that indicate a positive response whilst the odd digits indicate a negative response. In order for you to make the final deduction you need to take account of the following. The victim and suspect were in the same room.

Grid I – it is the even digit that appears once.
Grid II – it is the even digit that appears an even number of times.
Grid III – it is the even digit that appears most often.
Grid IV – it is an even digit that appears once.

Grid I – Victim/Method

Consider clues B and c which are triangular and square respectively (no red herring to deal with). This yields six possible pairs 21/16, 91/16, 36/64, 66/64, 28/81 and 78/81. This allows e to be calculated. Only two possible solutions emerge, 21 + 16 = 37 or 91 – 16 = 75. All others are either too large or negative.

Clue D is either e(F – 1) or f(F – 1) where F is a 2-digit prime hence (F – 1) must be even which makes D even. If e is 75 then clue D must be f(F – 1) since e(F – 1) would end in zero which is the start digit for f and so forbidden. The only possible solution is with F = 19 and f = 29 which gives D = 522. Now E must be 55 and A must be 57 = 3 x 19 which makes a = 55. This has a duplicate entry. Therefore e = 37, E = 78, B = 21 and c = 16.

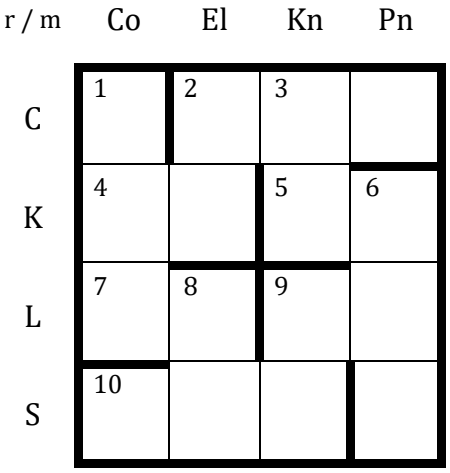
If D is f(F – 1) then we again have D = 522 with b a multiple of B so is 252. Now C is a palindrome and d is ?58. However ?58 is not a multiple of 21 or 57. Thus D is e(F – 1) and there are two possible solutions: F = 13 and D = 444 or F = 23 and D = 814. Either way f = 43.

If F = 13 then A = 39 or 91. We can discount the latter as that would have a = 91 also. Now b would have to 294 and a = 36. So C is 619 or 659 with d 148 or 548. Neither 148 or 548 are multiples of 21 or 39. Therefore F = 23, D = 814, A = 69 and a = 66. By calculation b = 231 so C is prime and can be 613, 643, 653, 673 or 683. Only 653 has d = 588 which is a multiple of its associated B = 21.

v / m	Co	El	Kn	Pn
Ho	A a 6	9	B b 2	c 1
Ma	C 6	d 5	3	6
Po	e 3	D 8	1	f 4
Re	E 7	8	F 2	3

Grid II : Room / Method

Each clue has two parts separated by a colon and solvers must discard the red herring in each case. Answers are unique, none starting with a zero. Multiples and divisors of a number are non-trivial, excluding the number itself. As before an even digit represents a positive response whilst an odd digit represents a negative response.



Across

2 cube : square

4 Fibonacci – 2dn : multiple of 2dn

5 reverse of a cube : reverse of a square

7 prime : reverse of a prime

9 (9ac + 9dn) divides 1dn : (9ac + 9dn) divides 6dn

10 multiple of (2dn + 4ac) : multiple of (9ac x 9dn)

Down

1 multiple of 3dn with ascending digits : multiple of 5ac with ascending digits

2 digit product greater than its digit sum : factor of 5ac

3 factor of 5ac : square – 5ac

6 cube : prime

8 Fibonacci : prime with a prime digit sum

9 digit sum of a down entry : not the digit sum of an across entry

Grid II – Room/Method

5ac can be 61,52,72,63,94,46,18 allowing 3dn,5ac combinations 97,72; 54,46; 31,18. 2ac is a square or cube so middle digit not 3. If 3dn=97, 2ac=196, 2dn=12 or 18, 1dn=679, 4ac=78 (72 is duplicate). With 2dn=18 neither 4ac clue is valid leaving 3dn=54, 2ac=256, 5ac=46; 6dn is a prime.

1dn is one of 378, 138, 368; 7ac=83 or 89. 2dn+4ac is even in the range 56 to 118; 50 to 68; 80 to 98 but that does not include an even Fibonacci. 4ac is a multiple of 2dn allowing 60,20 (contradicting 2dn clue) or 75,25 confirming 1dn=378.

Possible 8dn primes are 31, 37 or 97 but none have a prime digit sum so Fibonacci 8dn=34, 7ac=83. 10ac cannot be a multiple of (2dn+4ac)=100 so is a multiple of 9ac*9dn.
9ac*9dn<499 (10ac is multiple) so start 1 or 2. 20<9ac+9dn<45. 9ac+9dn cannot divide prime 6dn so divides 1dn=378. The valid totals are 42, 27 and 21.

Possible combinations for 9ac&9dn,9ac*9dn,10ac with 10ac a multiple of 9ac*9dn with middle digit 4 are:
10&17,170,340 (fails as 10 is digit sum of 5ac but not digit sum of a down answer)
12&15,180,540 (neither 9dn candidate ends 0)
13&14,182,546 (neither 9dn candidate ends 6)
10&11,110,440 consistent with 9dn=10, 9ac=11. 9dn must be digit sum of a down answer that has to be 6dn=613 a prime as required.

r / m	Co	El	Kn	Pn
C	1 3	2 2	3 5	6
K	4 7	5	5 4	6 6
L	7 8	8 3	9 1	1
S	10 4	4	0	3

Grid III : room/suspect

The letters in the clues represent a pair of non-palindromic composite numbers that when reversed remain composite. Within a clue a solitary letter can take either of its two values. Some clues have multiple parts separated by : and in these cases solvers must reject the red herring. As before an even digit represents a positive response and an odd digit a negative response. No entry starts with zero and all are distinct.

r / s	Ho	Ma	Po	Re
C	1		2	3
K	4	5	6	
L	7		8	9
S	10			

Across

1 AB
4 A
6 multiple of 3 : multiple of 11
7 B
8 C
10 CC

Down

1 A
2 its digit product equals 8ac : its digit sum equals 8ac
3 D = A + D : D = A + C
5 multiple of 15 : multiple of 25
7 C – D : C – C
9 C

Grid III – Room/Suspect

There are 20 possible pairs. 12/21, 15/51, 18/81, 24/42, 25/52, 26/62, 27/72, 28/82, 36/63, 39/93, 45/54, 46/64, 48/84, 49/94, 56/65, 57/75, 58/85, 68/86, 69/96 and 78/87.

5dn must end in 0 or 5.

10ac has 10 possible entries that have 0 or 5 as its 2nd digit. They are 6561 from 18/81, 1008 from 24/42, 1521 from 39/93, 2025 from 45/54, 4096 from 46/64, 7056 and 4032 both from 48/84 and 6084 and 7569 both from 78/87. Of these only 6561 and 4096 are viable from the cross check from 9dn. If it's 4096 then 9dn is 46 and 8ac is 64 but this fails on 2dn clue in that if it's the product then 64 isn't a multiple of 6 and if it's the sum then you can't make 64. 2025 fails similarly. Thus, 10ac = 6561 and 9dn = 81 and 8ac = 18.

2dn is either 891 or 981 if it's the sum or 291, 361, 631 or 921 if it's the product.

7dn cannot be C – C as the entry would be 72 so it must be C – D with C = 81 not 18 as that gives a 1-digit or negative entry. D = 81 – ?6 so D must contain a 5. The D/7dn pairing are 15/66, 25/56, 45/36 and 65/16. As a result, B must contain either a 1, 3, 5 or 6.

If 3dn = A + D, then A = 36/63 with D = 15/51 or A = 27/72 with D = 25/52. With 3dn = A + C then A = 27/72 with D = 45/54 or A = 36/63 with D again = 45/54.

The following table summarises this

Case	A	7dn	B	D
I	27/72	66	26/62: 36/63: 46/64: 56/65: 68/86: 69/96	15/51
II	36/63	66	26/62: 46/64: 56/65: 68/86: 69/96	15/51
III	27/72	56	15/51: 25/52: 45/54: 57/75: 58/85	25/52
IV	36/63	56	15/51: 25/52: 45/54: 57/75: 58/85	25/52
V	27/72	36	39/93	45/54
VI	27/72	16	12/21: 15/51	56/65
VII	36/63	16	12/21: 15/51	56/65

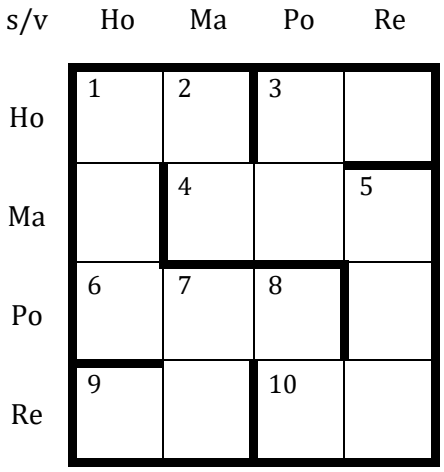
1ac AB must start with one of the two digits of A and end in one of the two digits of D with the 3rd digit 2, 3, 6, 8 or 9.

All cases fail on the terminal digit or having an entry starting with 0 apart from case III. There are two possibilities to consider, one has B 57/75 and AB 2025 whilst the other has B 58/85 and AB 2295. If it's 2025 then 2dn is 291, 3dn 52 and 6ac 92. However, 92 is not a multiple of 3 or a palindrome. 1ac is 2295, 1dn 27, 4ac 72, 2dn 921, 3dn 52 and 6ac 22. This arises from the 58/85 pairing for B. 7ac is 58, 7dn 56 and 5dn 285 a multiple of 15.

r / s	Ho	Ma	Po	Re
C	1 2	2	2 9	3 5
K	4 7	5 2	6 2	2
L	7 5	8	8 1	9 8
S	10 6	5	6	1

Grid IV : suspect/victim

At least one of the clues for each entry is genuine, the others are red herrings and must be eliminated in order to reach the solution. All entries are distinct and no entry starts with zero. A 'friendly' number is divisible by its digit sum. As always it is the even digits that indicate a positive response.



Across

1 friendly : square

3 digit product of 4ac : reverse digit product of 4ac

4 (2dn – 3ac) x 3ac : (3ac – 2dn) x 3ac

6 jumble of 1dn with strictly ascending digits : jumble of 1dn with strictly descending digits

9 friendly : triangular

10 Fibonacci : prime

Down

1 even multiple of 10ac : odd multiple of 10ac

2 prime : square

3 square : triangular

5 square of the digit product of 8dn : square of the digit product of 10ac

7 palindrome : triangular

8 10ac – Fibonacci : Fibonacci – 10ac

Grid IV – Suspect/Victim

10ac is Fibonacci or prime with 5dn a square. Fibonacci 10ac possibilities are 21,34,55,89. 21 or 89 are both odd but imply a contradictory even 5dn. 10ac=34 forces 8dn=13, 5dn=144. 10ac=55 has no 8dn. If 10ac is prime it ends 1 or 9. If 10ac ends 1, 5dn must be the square of the digit product of 8dn. The only candidate is 441, the square of 3x7 with 8dn=37, 10ac=71 for 10ac − 8dn = 34, Fibonacci. If 10ac ends 9 it can only be 59(no 5dn) or 79(no 8dn). This leaves two 8dn,10ac,5dn combinations 13,34,144 and 37,71,441.

If 10ac=34, then the only 1dn,6ac combination is 136,631. 1ac=12, 16 or 18. Of the 2dn candidates 23,25,29,61,64,67,81,83,89 only 64 is even. If 2dn odd then 3ac multiplied by the 2dn,3ac difference is always even so cannot end 1. With 2dn=64, 3ac is odd and 3ac,4ac combinations are: 21,431(431 prime); 61,441(3dn is duplicate 64); 23,481(481 not divisible by 23); 63,491(491 prime). This rules out 10ac=34.

With 10ac=71, 1dn= 639, 6ac=963, 7dn=66, 9ac=36. 1ac=63 or 64, 2dn can be 31, 36(duplicate), 37, 41, 43, 47, 49. 2dn ends and 4ac starts 1,3,7,9. The 4ac middle digit is one of 1,4,5,6,8,9 and with the last digit 4 the possible 4ac,3ac combinations with distinct 3dn being square or triangular are: 144,61; 154,20; 184,23; 314,21 (requires duplicate 21);714,28; 714,82. Only 184 is a multiple of its 3ac of 23, 2dn=31 or 41. The latter implies 4ac is (41-23)*23=414, 2dn=31 gives a consistent 4ac confirming 1ac=63.

s/v	Ho	Ma	Po	Re
Ho	1 6	2 3	3 2	3
Ma	3	4 1	8	5 4
Po	6 9	7 6	8 3	4
Re	9 3	6	10 7	1

In all of the grids it was the even digits that were important and in grid I; Holmes could have been strangled or stabbed, Marple strangled or poisoned, Poirot electrocuted or poisoned and Rebus electrocuted or stabbed.

In grid II; the conservatory had an electrocution hazard and poison, the kitchen had a knife and poison, the lounge had a cord suitable for strangling whilst the study had a cord suitable for strangling, an electrocution hazard and a knife.

In grid III; the conservatory had two visitors Holmes and Marple, the kitchen three visitors Marple, Poirot and Rebus, the lounge had two Marple and Rebus with the study having Holmes and Poirot.

In grid IV; Holmes could have committed suicide or killed Poirot, Marple could have killed Poirot or Rebus, Poirot could have killed Marple or Rebus and finally Rebus could have killed Marple.

- Grid I - we know that the victim was Poirot and that he was poisoned.
- Grid II – we know that the poison was in the conservatory and/or the kitchen.
- Grid III – we know that Holmes was in the conservatory, Marple was in the conservatory and kitchen, Rebus was in the kitchen and the victim Poirot was in the kitchen.
- Grid IV – if 2 is chosen then Holmes is the culprit but Holmes was never in the kitchen. Thus, it is 8 that is required and Marple is the poisoner.

Hercule Poirot was poisoned by Jane Marple in the kitchen.

We can only wonder as to what possessed the quiet, little old lady from St Mary Mead to take the course of action she did in carrying out this terrible act but it seems that jealousy had something to do with it. She was envious in that she felt Poirot always got the best cases and more foreign travel.

Holmes was in the conservatory searching for plants that would give him a high when he went to the study. Rebus was in the kitchen looking for more booze as he'd drunk all that was in the lounge. Poirot was in the kitchen looking for food as he was hungry. Marple was in the conservatory looking for poisonous plants so she could make something in the kitchen for Poirot.