Numbers and Chess Moves Logic Puzzle Solution

b3 is 17

We are told *numbers decrease to the left and downwards*. This fixes the largest and smallest, so

a1 is 25 and c5 is 1.

We are told that *the square numbers form a chain of knight's moves*. There are only two numbers between 4 and 1, so that 4 cannot be at d3 or c4. There is only one possible chain given b3=17:

c2 is 16 and c4 is 9 and e3 is 4.

We now know that 2 and 3 must be by 1:

	- 1 -	- 2 -	- 3 -	- 4 -	- 5 -
a	25				
b			17		
c		16		9	
d					2,3
e			4	2,3	1

We are told that *the primes form a bishop move chain*.

Thus all primes including 2, 3, 17 will be on a diagonal grid of squares as shaded in the next diagram.

The 5 cannot be in b5 or d3 because there is no smaller number to put in c5 or d2. So

e2 is 5.

Now:

- 6 and 8 are the only remaining numbers less than 9, so they must fill d4 and c5;
- 23 must be on a shaded square next to 25, and 24 must also be next to 25;
- the remaining primes 7, 11, 13, 19 must be in the remaining blank shaded squares in the diagram below:

	- 1 -	- 2 -	- 3 -	- 4 -	- 5 -
a	25	23,24			
b	23,24		17		
c		16		9	6,8
d				6,8	2,3
e		5	4	2,3	1

We are told *the multiples of 5 form a chain of king moves* so

b2 is 20.

The 10 must be in d2 or c3 so

d3 is 7

and as a result

d4 is 6 and c5 is 8.

Now 11 has to be on a shaded square and there are no numbers smaller than it left so

b5 is 11.

Also 13 has to be on a shaded square and there is only one number (12) smaller than it so

d1 is 13 and a4 is 19 and then d2 is 10 and c3 is 15.

	- 1 -	- 2 -	- 3 -	- 4 -	- 5 -
a	25	23,24		19	
b	23,24	20	17		11
c		16	15	9	8
d	13	10	7	6	2,3
e		5	4	2,3	1

Looking at the diagonal e1 to a5,

e1 is 12, a5 is 18 and b4 is 14

and we can identify the remaining pairs:

	- 1 -	- 2 -	- 3 -	- 4 -	- 5 -
a	25	23,24	21,22	19	18
b	23,24	20	17	14	11
c	21,22	16	15	9	8
d	13	10	7	6	2,3
e	12	5	4	2,3	1

We are told *the multiples of 8 form a rook-chain* **so**

a2 is 24 and b1 is 23.

We are told *the multiples of 7 form a queen-chain* so

a3 is 21 and c1 is 22.

Finally the *pawn move* clue (3^2=9) requires

d5 is 3 and e4 is 2, giving the solution:

	- 1 -	- 2 -	- 3 -	- 4 -	- 5 -
a	25	24	21	19	18
b	23	20	17	14	11
c	22	16	15	9	8
d	13	10	7	6	3
e	12	5	4	2	1