HW 2 Abdul-Ahad Butt Ok to post

1) The amount is equal to $\frac{n(n^2+1)}{2}$

The sum in any row must be $\frac{1}{n}$ times the sum because these are n rows of equal sum.

$$1+2+3+\ldots+n^2 = \frac{n^2(n^2+1)}{2}$$

$$\frac{1}{n} \cdot \frac{n^2(n+1)}{2} = \boxed{\frac{n(n^2+1)}{2}}$$

2)

8	1	6
3	5	7
4	9	2

3)

16	2	3	13
5	11	10	8
9	7	6	12
4	14	15	1

4)

30	39	48	1	10	19	28
38	47	7	9	18	27	29
46	6	8	17	26	35	37
5	14	16	25	34	36	45
13	15	24	33	42	44	4
21	23	32	41	43	3	12
22	31	40	49	2	11	20

5) Person A → 1, 3, 5, 7
Person B → 2, 4, 6

A / B	1	3	5	7
2	B	A	A	A
4	B	B	A	A
6	B	B	B	A

They are tied.
Prob. for A is 1/2
Prob for B is 1/2

6)

8	1	6
3	5	7
4	9	2

A → 8, 1, 6
B → 3, 5, 7
C → 4, 9, 2

A vs B

A / B	8	1	6
3	A	B	A
5	A	B	A
7	A	B	B

A wins

B vs C

B / C	3	5	7
4	C	B	B
9	C	C	C
2	B	B	B

B wins

A vs C

A / C	8	1	6
4	A	C	A
9	C	C	C
2	A	C	A

C wins