

Pursuit and Evasion Game Instructions

You have been matched against one of the other people in the room. The two of you will play a *match*, in which points are won and lost by playing a simple game of pursuit and evasion, or “hide and seek.” One of you is the Pursuer, the other is the Evader. Your computer screen indicates which role you will play. Each time the two of you play the game, one of you will win a point.

Here's how the Pursuit-and-Evasion game for each point is played: The Pursuer tries to “find” the Evader and to “capture” the point from him. Each player will have the option to move either Left or Right, by using your mouse to press either the Left button or the Right button on your screen . If your moves do not match (*i.e.*, if one of you has moved Left and the other has moved Right), then the Evader has succeeded: the Evader wins the point. On the other hand, if your moves **do** match (*i.e.*, if both of you move Left or both move Right), then the Pursuer **has** found the Evader, and in this case the computer will randomly determine whether the Pursuer captures the point or not. The computer will randomly select a number between zero and one (all numbers between zero and one are equally likely). When both players have moved Left, the Pursuer captures the point from the Evader if the number drawn is less than $1/3$. When both players have moved Right, the Pursuer captures the point from the Evader if the number drawn is less than $2/3$.

Summarizing, points are decided as follows:

If both moved Left: Pursuer wins if a number less than $1/3$ is drawn (a $1/3$ chance).
Evader wins if the number is $1/3$ or larger (a $2/3$ chance).

If both moved Right: Pursuer wins if a number less than $2/3$ is drawn (a $2/3$ chance).
Evader wins if the number is $2/3$ or larger (a $1/3$ chance).

If one player moved Left and the other moved Right: Evader wins the point.

Here's how the winner of the *match* will be determined. Since the Evader typically wins more points than the Pursuer in this game, the Evader will have to win more points to win the match, as follows:

If the Pursuer wins 22 points, the match ends and the Pursuer is the winner.
If the Evader wins 76 points, the match ends and the Evader is the winner.

Note that after at most 97 points are played one player or the other will have enough points to win the match.

Match Play 2001

Match Play: max97 rounds, #1 needs 22, #2 needs 76

	<u>Winner</u>	<u>#1 MixL</u>	<u>#2 MixL</u>	<u>#1Wins</u>	<u>#2Wins</u>	<u>Rounds</u>	<u>#1-L</u>	<u>#1-LW</u>	<u>#1-R</u>	<u>#1-RW</u>	<u>#2-L</u>	<u>#2-LW</u>	<u>#2-R</u>	<u>#2-RW</u>
pair1	1	0.54	0.48	0.25	0.75	89	48	6	41	16	43	37	46	30
pair2	1	0.46	0.65	0.24	0.76	92	42	6	50	16	60	54	32	16
pair3	1	0.52	0.56	0.23	0.77	94	49	11	45	11	53	42	41	30
pair4	2	0.63	0.74	0.20	0.80	95	60	15	35	4	70	55	25	21
pair6	2	0.65	0.63	0.19	0.81	94	61	11	33	7	59	48	35	28
pair7	1	0.85	0.97	0.34	0.66	65	55	21	10	1	63	42	2	1
pair8	1	0.45	0.50	0.26	0.74	84	38	6	46	16	42	36	42	26
pair9	1	0.49	0.69	0.30	0.70	74	36	13	38	9	51	38	23	14
pair10	1	0.60	0.62	0.34	0.66	65	39	13	26	9	40	27	25	16
pair12	1	0.52	0.67	0.24	0.76	93	48	10	45	12	62	52	31	19
pair14	1	0.54	0.61	0.27	0.73	83	45	12	38	10	51	39	32	22
pair15	2	0.64	0.83	0.08	0.92	83	53	4	30	3	69	65	14	11
pair16	2	0.90	0.08	0.10	0.90	84	76	1	8	7	7	6	77	70
pair17	2	0.34	0.69	0.16	0.84	90	31	4	59	10	62	58	28	18
Aggregate		0.575	0.618	0.2228	0.7772		681	133	504	131	732	599	453	322
						WRates:		0.20		0.26		0.82		0.71
						Mix:	0.575		0.425		0.618		0.382	

#1: Pursuer

#2: Evader

Winner: Which player won the match

MixL: Pct of player's choices that were Left

Wins: Pct of plays won by the player

Rounds: # of rounds actually played

#1-L: Number of plays on which Player #1 chose Left

#1-LW: Number of plays on which Player #1 chose Left and won

#1-R: Number of plays on which Player #1 chose Right

#1-RW: Number of plays on which Player #1 chose Right and won

Similarly for Player 2