DISTRIBUTION DU KHI2

La table donne les valeurs critiques de χ^2 pour un nombre de degrés de liberté (ddl) et pour un seuil de tolérance (α).

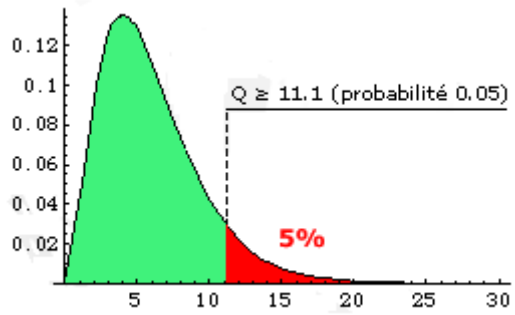
En fonction du nombre de degrés de liberté (qu'on lit sur la première colonne) et du risque d'erreur α (qu'on lit sur la première ligne), on trouve la valeur de l'écart χ^2 qui possède la probabilité α d'être dépassée.

Valeur de χ^2 pour laquelle la probabilité d'une valeur inférieure à χ^2 suivant le nombre n de degrés de liberté est $\alpha = F_n(\chi^2)$.

Par exemple : Pour ddl = 5 et $\alpha = 0{,}05$ la table indique $\chi^2 = 11{,}1$

Ceci signifie que : P ($\chi^2_{[5]} > 11{,}1$) = 0,05.

$n\backslash\alpha$	0,995	0,990	0,075	0,950	0,900	0,750	0,500	0,250	0,100	**0,050**	0,025	0,010	0,005
1	0,000	0,000	0,001	0,004	0,016	0,102	0,455	1,320	2,710	3,840	5,020	6,630	7,880
2	0,010	0,020	0,051	0,103	0,211	0,575	1,390	2,770	4,610	5,990	7,380	9,210	10,600
3	0,072	0,115	0,216	0,352	0,584	1,210	2,370	4,110	6,250	7,810	9,350	11,300	12,800
4	0,207	0,297	0,484	0,711	1,060	1,920	3,360	5,390	7,780	9,490	11,100	13,300	14,900
5	0,412	0,554	0,831	1,150	1,610	2,670	4,350	6,630	9,240	**11,100**	12,800	15,100	16,700
6	0,676	0,872	1,240	1,640	2,200	3,450	5,350	7,840	10,600	12,600	14,400	16,800	18,500
7	0,989	1,240	1,690	2,170	2,830	4,250	6,350	9,040	12,000	14,100	16,000	18,500	20,300



Pour 5 degrés de liberté, Q sera supérieur à 11,1 dans seulement 5% des cas.

Remarques :

Pour les grandes valeurs de n, la loi de probabilité de χ^2 tend vers une loi normale de moyenne n et de variance 2 n.

Si n est suffisamment grand ($n > 30$), la variable aléatoire $\sqrt{2\chi^2} - \sqrt{2n-1}$ suit, à peu près, une loi normale centrée réduite N(0; 1).

Table de la loi de χ^2 ou de Karl Pearson

$n\backslash\alpha$	0,995	0,990	0,075	0,950	0,900	0,750	0,500	0,250	0,100	0,050	0,025	0,010	0,005
1	0,000	0,000	0,001	0,004	0,016	0,102	0,455	1,320	2,710	3,840	5,020	6,630	7,880
2	0,010	0,020	0,051	0,103	0,211	0,575	1,390	2,770	4,610	5,990	7,380	9,210	10,600
3	0,072	0,115	0,216	0,352	0,584	1,210	2,370	4,110	6,250	7,810	9,350	11,300	12,800
4	0,207	0,297	0,484	0,711	1,060	1,920	3,360	5,390	7,780	9,490	11,100	13,300	14,900
5	0,412	0,554	0,831	1,150	1,610	2,670	4,350	6,630	9,240	11,100	12,800	15,100	16,700
6	0,676	0,872	1,240	1,640	2,200	3,450	5,350	7,840	10,600	12,600	14,400	16,800	18,500
7	0,989	1,240	1,690	2,170	2,830	4,250	6,350	9,040	12,000	14,100	16,000	18,500	20,300
8	1,340	1,650	2,180	2,730	3,490	5,070	7,340	10,200	13,400	15,500	17,5	20,100	22,000
9	1,730	2,090	2,700	3,330	4,170	5,900	8,340	11,400	14,700	16,900	19,000	21,700	23,600
10	2,160	2,560	3,250	3,940	4,870	6,740	9,340	12,500	16,000	18,300	20,500	23,200	25,200
11	2,600	3,050	3,820	4,570	5,580	7,580	10,300	13,700	17,300	19,700	21,900	24,700	26,800
12	3,070	3,570	4,400	5,230	6,300	8,440	11,300	14,800	18,500	21,000	23,300	26,200	28,300
13	3,57	4,110	5,010	5,890	7,040	9,300	12,300	16,000	19,800	22,400	24,700	27,700	29,800
14	4,070	4,660	5,630	6,570	7,790	10,200	13,300	17,100	21,100	23,700	26,100	29,100	31,300
15	4,600	5,230	6,260	7,260	8,550	11,000	14,300	18,200	22,300	25,000	27,500	30,600	32,800
16	5,140	5,810	6,910	7,960	9,310	11,900	15,300	19,400	23,500	26,300	28,800	32,000	34,300
17	5,700	6,410	7,560	8,670	10,100	12,800	16,300	20,500	24,800	27,600	32,000	33,400	35,700
18	6,260	7,010	8,230	9,390	10,900	13,700	17,300	21,600	26,000	28,900	31,500	34,800	37,200
19	6,840	7,630	8,910	10,100	11,700	14,600	18,300	22,700	27,200	30,100	32,900	36,200	38,600
20	7,430	8,260	9,560	10,900	12,400	15,500	19,300	23,800	28,400	31,400	34,200	37,600	40,000
21	8,030	8,900	10,300	11,600	13,200	16,300	20,300	24,900	29,600	32,700	35,500	38,900	41,400
22	8,640	9,540	11,000	12,300	14,000	17,200	21,300	26,000	30,800	33,900	36,800	40,300	42,800
23	9,260	10,200	11,700	13,100	14,800	18,100	22,300	27,100	32,000	35,200	38,100	41,600	44,200
24	9,890	10,900	12,400	13,800	15,700	19,000	23,300	28,200	33,200	36,400	39,400	43,000	45,600
25	10,500	11,500	13,100	14,600	16,500	19,900	24,300	29,300	34,400	37,700	40,600	44,300	46,900
26	11,200	12,200	13,800	15,400	17,300	20,800	25,300	30,100	35,600	38,900	41,900	45,600	48,300
27	11,800	12,900	14,600	16,200	18,100	21,700	26,300	31,500	36,700	40,100	43,200	47,000	49,600
28	12,500	13,600	15,300	16,900	18,900	22,700	27,300	32,600	37,900	41,300	44,500	48,300	51,000
29	13,100	14,300	16,000	17,700	19,800	23,600	28,300	33,700	39,100	42,600	45,700	49,600	52,300
30	13,800	15,000	16,800	18,500	20,600	24,500	29,300	34,800	40,300	43,800	47,000	50,900	53,700
40	20,7	22,200	24,400	26,500	29,100	33,700	39,300	45,600	51,800	55,800	59,300	63,700	66,800
50	28,000	29,700	32,400	34,800	37,700	42,900	49,300	56,300	63,200	67,500	71,400	76,200	79,500
60	35,500	37,500	40,500	43,200	46,500	52,300	59,300	67,000	74,400	79,100	83,300	88,400	92,000
70	43,300	45,400	48,800	51,700	55,300	61,700	69,300	77,600	85,500	90,500	95,000	100,400	104,200
80	51,200	53,500	57,200	60,400	64,300	71,100	79,300	88,100	96,600	101,900	106,600	112,400	116,300
90	59,200	61,800	65,600	69,100	73,300	80,600	89,300	98,600	107,600	113,100	118,100	124,100	128,300
100	67,300	70,100	74,200	77,900	82,400	90,100	99,300	109,100	118,500	124,300	129,600	135,800	140,200