

convert ascii to error probability

http://en.wikipedia.org/wiki/FASTQ_format

<http://upload.wikimedia.org/math/2/7/9/27965b367978f44297efab5544bae04.png>

$$Q = -10 * \log_{10} P$$



S' hg18-total-sequenced=2'858'034'764 (UCSC)

Sanger		Phred-33 Illumina 1.8+		Solexa		Phred-64 Illumina 1.3+		Phred-64 Illumina 1.5+		Q	error probability	%correct	1-error in # bases	# errors in 2.85Gb ('\$')
Char (q)	Dec	Char (q)	Dec	Char (q)	Dec	Char (q)	Dec	Char (q)	Dec					
										-5				
										-4				
										-3				
										-2				
										-1				
										0	1,00E+00	0,000%	1	2.858.034.764
										1	7,94E-01	20,567%	1	2.270.217.709
										2	6,31E-01	36,904%	2	1.803.298.025
										3	5,01E-01	49,881%	2	1.432.410.537
										4	3,98E-01	60,189%	3	1.137.804.133
										5	3,16E-01	68,377%	3	903.789.949
										6	2,51E-01	74,881%	4	717.905.874
										7	2,00E-01	80,047%	5	570.252.906
										8	1,58E-01	84,151%	6	452.967.984
										9	1,26E-01	87,411%	8	359.805.259
										10	1,00E-01	90,000%	10	285.803.476
										11	7,94E-02	92,057%	13	227.021.771
										12	6,31E-02	93,690%	16	180.329.803
										13	5,01E-02	94,988%	20	143.241.054
										14	3,98E-02	96,019%	25	113.780.413
										15	3,16E-02	96,838%	32	90.378.995
										16	2,51E-02	97,488%	40	71.790.587
										17	2,00E-02	98,005%	50	57.025.291
										18	1,58E-02	98,415%	63	45.296.798
										19	1,26E-02	98,741%	79	35.980.526
										20	1,00E-02	99,000%	100	28.580.348
										21	7,94E-03	99,206%	126	22.702.177
										22	6,31E-03	99,369%	158	18.032.980
										23	5,01E-03	99,499%	200	14.324.105
										24	3,98E-03	99,602%	251	11.378.041
										25	3,16E-03	99,684%	316	9.037.899
										26	2,51E-03	99,749%	398	7.179.059
										27	2,00E-03	99,800%	501	5.702.529
										28	1,58E-03	99,842%	631	4.529.680
										29	1,26E-03	99,874%	794	3.598.053
										30	1,00E-03	99,900%	1.000	2.858.035
										31	7,94E-04	99,921%	1.259	2.270.218
										32	6,31E-04	99,937%	1.585	1.803.298
										33	5,01E-04	99,950%	1.995	1.432.411
										34	3,98E-04	99,960%	2.512	1.137.804
										35	3,16E-04	99,968%	3.162	903.790
										36	2,51E-04	99,975%	3.981	717.906
										37	2,00E-04	99,980%	5.012	570.253
										38	1,58E-04	99,984%	6.310	452.968
										39	1,26E-04	99,987%	7.943	359.805
										40	1,00E-04	99,990%	10.000	285.803
										41	7,94E-05	99,992%	12.589	227.022