

Fractional Pricing - Tick and Decimal Conversions

This topic provides all permutations of fractional price type and tick size.

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*For products that tick in modified fourths (30-Day Fed Funds options and Rough Rice options), the decimal '.5' is implied in the price display. The Number of Decimals in Displayed Price will be sent out as '01' but should be treated as '00'. For example, an actual price of '12.5' would be displayed as '12' even though the Number of Decimals in Displayed price value '01' normally dictates a display of '12.5'. **The refore, client systems must include the .5 in the fractional conversion to decimal calculation for these products.**

Tick Conversion Grid

The Tick Conversion Grid shows the display value for a given decimal to formatted fractional tick.

TDFT = Tick Display Format Type

NDDP = Number of Decimals in Display Price

TDFT	01	02	04	08	16	32	64				
NDDP	00	01*	01	01	02	02	02	03	03	03	
0			0	0	00	00	00	00	000	000	
0.0078125									002	005	
0.015625							01	005	005	010	
0.0234375									007	015	
0.03125						01	02	010	010	020	
0.0390625									12	25	
0.046875							03	015	015	030	
0.0546875									017	035	
0.0625					01	02	04	020	020	040	
0.0703125									22	45	
0.078125							05	025	025	050	
0.0859375									027	055	
0.09375						03	06	030	030	060	
0.1015625									032	065	
0.109375							07	035	035	070	
0.1171875									037	075	
0.125				1	02	04	08	040	040	080	
0.1328125									042	085	
0.140625							09	045	045	090	
0.1484375									047	095	
0.15625						05	10	050	050	100	
0.1640625									052	105	
0.171875							11	55	55	110	
0.1796875									57	115	
0.1875					03	06	12	060	060	120	
0.1953125									062	125	
0.203125							13	065	065	130	
0.2109375									067	135	
0.21875						07	14	070	070	140	
0.2265625									072	145	
0.234375							15	075	075	150	
0.2421875									077	155	

0.25			2	2	04	08	16	080	080	160
0.2578125									082	165
0.265625							17	085	085	170
0.2734375									087	175
0.28125						09	18	090	090	180
0.2890625									092	185
0.296875							19	095	095	190
0.3046875									097	195
0.3125					05	10	20	100	100	200
0.3203125									102	205
0.328125							21	105	105	210
0.3359375									107	215
0.34375						11	22	110	110	220
0.3515625									112	225
0.359375							23	115	115	230
0.3671875									117	235
0.375				3	06	12	24	120	120	240
0.3828125									122	245
0.390625							25	125	125	250
0.3984375									127	255
0.40625						13	26	130	130	260
0.4140625									132	265
0.421875							27	135	135	270
0.4296875									137	275
0.4375					07	14	28	140	140	280
0.4453125									142	285
0.453125							29	145	145	290
0.4609375									147	295
0.46875						15	30	150	150	300
0.4765625									152	305
0.484375							31	155	155	310
0.4921875									157	315
0.5			5	4	08	16	32	160	160	320
0.5078125									162	325
0.515625							33	165	165	330
0.5234375									167	335
0.53125						17	34	170	170	340
0.5390625									172	345
0.546875							35	175	175	350
0.5546875									177	355
0.5625					09	18	36	180	180	360
0.5703125									182	365
0.578125							37	185	185	370
0.5859375									187	375
0.59375						19	38	190	190	380
0.6015625									192	385
0.609375							39	195	195	390
0.6171875									197	395
0.625				5	10	20	40	200	200	400
0.6328125									202	405
0.640625							41	205	205	410
0.6484375									207	415
0.65625						21	42	210	210	420
0.6640625									212	425

0.671875						43	215	215	430
0.6796875								217	435
0.6875			11	22	44	220	220	220	440
0.6953125								222	445
0.703125						45	225	225	450
0.7109375								227	455
0.71875				23	46	230	230	230	460
0.7265625								232	465
0.734375						47	235	235	470
0.7421875								237	475
0.75		7	6	12	24	48	240	240	480
0.7578125								242	485
0.765625						49	245	245	490
0.7734375								247	495
0.78125				25	50	250	250	250	500
0.7890625								252	505
0.796875						51	255	255	510
0.8046875								257	515
0.8125			13	26	52	260	260	260	520
0.8203125								262	525
0.828125						53	265	265	530
0.8359375								267	535
0.84375				27	54	270	270	270	540
0.8515625								272	545
0.859375						55	275	275	550
0.8671875								277	555
0.875		7	14	28	56	280	280	280	560
0.8828125								282	565
0.890625						57	285	285	570
0.8984375								287	575
0.90625				29	58	290	290	290	580
0.9140625								292	585
0.921875						59	295	295	590
0.9296875								297	595
0.9375			15	30	60	300	300	300	600
0.9453125								302	605
0.953125						61	305	305	610
0.9609375								307	615
0.96875				31	62	310	310	310	620
0.9765625								312	625
0.984375						63	315	315	630
0.9921875								317	635
1		0	0	00	00	00	000	000	000

Tick Display Format Type 01-08

TDFT = Tick Display Format Type

NDDP = Number of Decimals in Display Price

Formatted Fractional Tick to Decimal						
TDFT	01	02	04		08	
NDDP	00	01*	01		01	
			Ticks	Decimal	Ticks	Decimal
			0	0	0	0
			2	0.25	1	0.125

			5	0.5	2	0.25
			7	0.75	3	0.375
					4	0.5
					5	0.625
					6	0.75
					7	0.875

Tick Display Format Type 16 - 32

TDFT = Tick Display Format Type

NDDP = Number of Decimals in Display Price

Formatted Fractional Tick to Decimal					
TDF	16		32		
NDDP	2		2		
Ticks	Decimal	Ticks	Decimal	Ticks	Decimal
0	0	0	0	16	0.5
1	0.0625	1	0.03125	17	0.53125
2	0.125	2	0.0625	18	0.5625
3	0.1875	3	0.09375	19	0.59375
4	0.25	4	0.125	20	0.625
5	0.3125	5	0.15625	21	0.65625
6	0.375	6	0.1875	22	0.6875
7	0.4375	7	0.21875	23	0.71875
8	0.5	8	0.25	24	0.75
9	0.5625	9	0.28125	25	0.78125
10	0.625	10	0.3125	26	0.8125
11	0.6875	11	0.34375	27	0.84375
12	0.75	12	0.375	28	0.875
13	0.8125	13	0.40625	29	0.90625
14	0.875	14	0.4375	30	0.9375
15	0.9375	15	0.46875	31	0.96875

Tick Display Format Type 64 - Half 1/32

TDFT = Tick Display Format Type

NDDP = Number of Decimals in Display Price

Formatted Fractional Tick to Decimal							
TDFT	64				Half 1/32 Tick		
NDDP	2				3		
Ticks	Decimal	Ticks	Decimal	Ticks	Decimal	Ticks	Decimal
0	0	32	0.5	0	0	160	0.5
1	0.015625	33	0.515625	5	0.015625	165	0.515625
2	0.03125	34	0.53125	10	0.03125	170	0.53125
3	0.046875	35	0.546875	15	0.046875	175	0.546875
4	0.0625	36	0.5625	20	0.0625	180	0.5625
5	0.078125	37	0.578125	25	0.078125	185	0.578125
6	0.09375	38	0.59375	30	0.09375	190	0.59375
7	0.109375	39	0.609375	35	0.109375	195	0.609375
8	0.125	40	0.625	40	0.125	200	0.625
9	0.140625	41	0.640625	45	0.140625	205	0.640625
10	0.15625	42	0.65625	50	0.15625	210	0.65625

11	0.171875	43	0.671875	55	0.171875	215	0.671875
12	0.1875	44	0.6875	60	0.1875	220	0.6875
13	0.203125	45	0.703125	65	0.203125	225	0.703125
14	0.21875	46	0.71875	70	0.21875	230	0.71875
15	0.234375	47	0.734375	75	0.234375	235	0.734375
16	0.25	48	0.75	80	0.25	240	0.75
17	0.265625	49	0.765625	85	0.265625	245	0.765625
18	0.28125	50	0.78125	90	0.28125	250	0.78125
19	0.296875	51	0.796875	95	0.296875	255	0.796875
20	0.3125	52	0.8125	100	0.3125	260	0.8125
21	0.328125	53	0.828125	105	0.328125	265	0.828125
22	0.34375	54	0.84375	110	0.34375	270	0.84375
23	0.359375	55	0.859375	115	0.359375	275	0.859375
24	0.375	56	0.875	120	0.375	280	0.875
25	0.390625	57	0.890625	125	0.390625	285	0.890625
26	0.40625	58	0.90625	130	0.40625	290	0.90625
27	0.421875	59	0.921875	135	0.421875	295	0.921875
28	0.4375	60	0.9375	140	0.4375	300	0.9375
29	0.453125	61	0.953125	145	0.453125	305	0.953125
30	0.46875	62	0.96875	150	0.46875	310	0.96875
31	0.484375	63	0.984375	155	0.484375	315	0.984375

Tick Display Format Quarter 1/32

TDFT = Tick Display Format Type

NDDP = Number of Decimals in Display Price

Formatted Fractional Tick to Decimal							
TDFT	Quarter 1/32 Tick						
NDDP	3						
Ticks	Decimal	Ticks	Decimal	Ticks	Decimal	Ticks	Decimal
000	0.0000000	080	0.2500000	160	0.5000000	240	0.7500000
002	0.0078125	082	0.2578125	162	0.5078125	242	0.7578125
005	0.0156250	085	0.2656250	165	0.5156250	245	0.7656250
007	0.0234375	087	0.2734375	167	0.5234375	247	0.7734375
010	0.0312500	090	0.2812500	170	0.5312500	250	0.7812500
012	0.0390625	092	0.2890625	172	0.5390625	252	0.7890625
015	0.0468750	095	0.2968750	175	0.5468750	255	0.7968750
017	0.0546875	097	0.3046875	177	0.5546875	257	0.8046875
020	0.0625000	100	0.3125000	180	0.5625000	260	0.8125000
022	0.0703125	102	0.3203125	182	0.5703125	262	0.8203125
025	0.0781250	105	0.3281250	185	0.5781250	265	0.8281250
027	0.0859375	107	0.3359375	187	0.5859375	267	0.8359375
030	0.0937500	110	0.3437500	190	0.5937500	270	0.8437500
032	0.1015625	112	0.3515625	192	0.6015625	272	0.8515625
035	0.1093750	115	0.3593750	195	0.6093750	275	0.8593750
037	0.1171875	117	0.3671875	197	0.6171875	277	0.8671875
040	0.1250000	120	0.3750000	200	0.6250000	280	0.8750000
042	0.1328125	122	0.3828125	202	0.6328125	282	0.8828125
045	0.1406250	125	0.3906250	205	0.6406250	285	0.8906250
047	0.1484375	127	0.3984375	207	0.6484375	287	0.8984375
050	0.1562500	130	0.4062500	210	0.6562500	290	0.9062500
052	0.1640625	132	0.4140625	212	0.6640625	292	0.9140625
055	0.1718750	135	0.4218750	215	0.6718750	295	0.9218750
057	0.1796875	137	0.4296875	217	0.6796875	297	0.9296875
060	0.1875000	140	0.4375000	220	0.6875000	300	0.9375000

062	0.1953125	142	0.4453125	222	0.6953125	302	0.9453125
065	0.2031250	145	0.4531250	225	0.7031250	305	0.9531250
067	0.2109375	147	0.4609375	227	0.7109375	307	0.9609375
070	0.2187500	150	0.4687500	230	0.7187500	310	0.9687500
072	0.2265625	152	0.4765625	232	0.7265625	312	0.9765625
075	0.2343750	155	0.4843750	235	0.7343750	315	0.9843750
077	0.2421875	157	0.4921875	237	0.7421875	317	0.9921875

Tick Display Format Eighth 1/32

Formatted Fractional Tick to Decimal							
TDFT	Eighth 1/32 Tick						
NDDP	3						
Display Ticks	Decimal	Display Ticks	Decimal	Display Ticks	Decimal	Display Ticks	Decimal
000	0.0000000	080	0.2500000	160	0.5000000	240	0.7500000
001	0.00390625	081	0.25390625	161	0.50390625	241	0.75390625
002	0.0078125	082	0.2578125	162	0.5078125	242	0.7578125
003	0.01171875	083	0.26171875	163	0.51171875	243	0.76171875
005	0.0156250	085	0.2656250	165	0.5156250	245	0.7656250
006	0.01953125	086	0.26953125	166	0.51953125	246	0.76953125
007	0.0234375	087	0.2734375	167	0.5234375	247	0.7734375
008	0.02734375	088	0.27734375	168	0.52734375	248	0.77734375
010	0.0312500	090	0.2812500	170	0.5312500	250	0.7812500
011	0.03515625	091	0.28515625	171	0.53515625	251	0.78515625
012	0.0390625	092	0.2890625	172	0.5390625	252	0.7890625
013	0.04296875	093	0.29296875	173	0.54296875	253	0.79296875
015	0.0468750	095	0.2968750	175	0.5468750	255	0.7968750
016	0.05078125	096	0.30078125	176	0.55078125	256	0.80078125
017	0.0546875	097	0.3046875	177	0.5546875	257	0.8046875
018	0.05859375	098	0.30859375	178	0.55859375	258	0.80859375
020	0.0625000	100	0.3125000	180	0.5625000	260	0.8125000
021	0.06640625	101	0.31640625	181	0.56640625	261	0.81640625
022	0.0703125	102	0.3203125	182	0.5703125	262	0.8203125
023	0.07421875	103	0.32421875	183	0.57421875	263	0.82421875
025	0.078125	105	0.3281250	185	0.5781250	265	0.8281250
026	0.08203125	106	0.33203125	186	0.58203125	266	0.83203125
027	0.0859375	107	0.3359375	187	0.5859375	267	0.8359375
028	0.08984375	108	0.33984375	188	0.58984375	268	0.83984375
030	0.0937500	110	0.3437500	190	0.5937500	270	0.8437500
031	0.09765625	111	0.34765625	191	0.59765625	271	0.84765625
032	0.1015625	112	0.3515625	192	0.6015625	272	0.8515625
033	0.10546875	113	0.35546875	193	0.60546875	273	0.85546875
035	0.1093750	115	0.3593750	195	0.6093750	275	0.8593750
036	0.11328125	116	0.36328125	196	0.61328125	276	0.86328125
037	0.1171875	117	0.3671875	197	0.6171875	277	0.8671875
038	0.12109375	118	0.37109375	198	0.62109375	278	0.87109375
040	0.1250000	120	0.3750000	200	0.6250000	280	0.8750000
041	0.12890625	121	0.37890625	201	0.62890625	281	0.87890625
042	0.1328125	122	0.3828125	202	0.6328125	282	0.8828125
043	0.13671875	123	0.38671875	203	0.63671875	283	0.88671875
045	0.1406250	125	0.3906250	205	0.6406250	285	0.8906250
046	0.14453125	126	0.39453125	206	0.64453125	286	0.89453125
047	0.1484375	127	0.3984375	207	0.6484375	287	0.8984375

048	0.15234375	128	0.40234375	208	0.65234375	288	0.90234375
050	0.1562500	130	0.4062500	210	0.6562500	290	0.9062500
051	0.16015625	131	0.41015625	211	0.66015625	291	0.91015625
052	0.1640625	132	0.4140625	212	0.6640625	292	0.9140625
053	0.16796875	133	0.41796875	213	0.66796875	293	0.91796875
055	0.1718750	135	0.4218750	215	0.6718750	295	0.9218750
056	0.17578125	136	0.42578125	216	0.67578125	296	0.92578125
057	0.1796875	137	0.4296875	217	0.6796875	297	0.9296875
058	0.18359375	138	0.43359375	218	0.68359375	298	0.93359375
060	0.1875000	140	0.4375000	220	0.6875000	300	0.9375000
061	0.19140625	141	0.44140625	221	0.69140625	301	0.94140625
062	0.1953125	142	0.4453125	222	0.6953125	302	0.9453125
063	0.19921875	143	0.44921875	223	0.69921875	303	0.94921875
065	0.2031250	145	0.4531250	225	0.7031250	305	0.9531250
066	0.20703125	146	0.45703125	226	0.70703125	306	0.95703125
067	0.2109375	147	0.4609375	227	0.7109375	307	0.9609375
068	0.21484375	148	0.46484375	228	0.71484375	308	0.96484375
070	0.2187500	150	0.4687500	230	0.7187500	310	0.9687500
071	0.22265625	151	0.47265625	231	0.72265625	311	0.97265625
072	0.2265625	152	0.4765625	232	0.7265625	312	0.9765625
073	0.23046875	153	0.48046875	233	0.73046875	313	0.98046875
075	0.2343750	155	0.4843750	235	0.7343750	315	0.9843750
076	0.23828125	156	0.48828125	236	0.73828125	316	0.98828125
077	0.2421875	157	0.4921875	237	0.7421875	317	0.9921875
078	0.24609375	158	0.49609375	238	0.74609375	318	0.99609375

Tick Display Format Half 1/64

Formatted Fractional Tick to Decimal							
TDFT	Half 1/64 Tick						
NDDP	3						
Ticks	Decimal	Ticks	Decimal	Ticks	Decimal	Ticks	Decimal
000	0.0000000	160	0.2500000	320	0.5000000	480	0.7500000
005	0.0078125	165	0.2578125	325	0.5078125	485	0.7578125
010	0.0156250	170	0.2656250	330	0.5156250	490	0.7656250
015	0.0234375	175	0.2734375	335	0.5234375	495	0.7734375
020	0.0312500	180	0.2812500	340	0.5312500	500	0.7812500
025	0.0390625	185	0.2890625	345	0.5390625	505	0.7890625
030	0.0468750	190	0.2968750	350	0.5468750	510	0.7968750
035	0.0546875	195	0.3046875	355	0.5546875	515	0.8046875
040	0.0625000	200	0.3125000	360	0.5625000	520	0.8125000
045	0.0703125	205	0.3203125	365	0.5703125	525	0.8203125
050	0.0781250	210	0.3281250	370	0.5781250	530	0.8281250
055	0.0859375	215	0.3359375	375	0.5859375	535	0.8359375
060	0.0937500	220	0.3437500	380	0.5937500	540	0.8437500
065	0.1015625	225	0.3515625	385	0.6015625	545	0.8515625
070	0.1093750	230	0.3593750	390	0.6093750	550	0.8593750
075	0.1171875	235	0.3671875	395	0.6171875	555	0.8671875
080	0.1250000	240	0.3750000	400	0.6250000	560	0.8750000
085	0.1328125	245	0.3828125	405	0.6328125	565	0.8828125
090	0.1406250	250	0.3906250	410	0.6406250	570	0.8906250
095	0.1484375	255	0.3984375	415	0.6484375	575	0.8984375
100	0.1562500	260	0.4062500	420	0.6562500	580	0.9062500
105	0.1640625	265	0.4140625	425	0.6640625	585	0.9140625

110	0.1718750	270	0.4218750	430	0.6718750	590	0.9218750
115	0.1796875	275	0.4296875	435	0.6796875	595	0.9296875
120	0.1875000	280	0.4375000	440	0.6875000	600	0.9375000
125	0.1953125	285	0.4453125	445	0.6953125	605	0.9453125
130	0.2031250	290	0.4531250	450	0.7031250	610	0.9531250
135	0.2109375	295	0.4609375	455	0.7109375	615	0.9609375
140	0.2187500	300	0.4687500	460	0.7187500	620	0.9687500
145	0.2265625	305	0.4765625	465	0.7265625	625	0.9765625
150	0.2343750	310	0.4843750	470	0.7343750	630	0.9843750
155	0.2421875	315	0.4921875	475	0.7421875	635	0.9921875

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