

Intel i7-6600U

	0.0	1.0	1e10	1e+200	1e-300	1e-42	256	257	1e-320
	Cycle count								
0.0	5.19	5.21	5.22	5.19	5.24	5.21	5.19	5.21	5.22
1.0	5.22	5.20	5.21	5.22	5.21	5.20	5.20	5.21	5.23
1e10	5.20	5.21	5.20	5.21	5.22	5.21	5.19	5.21	5.20
1e+200	5.23	5.23	5.25	5.24	5.21	5.23	5.23	5.23	5.23
1e-300	5.22	5.22	5.24	5.21	5.23	5.22	5.21	5.21	5.21
1e-42	5.23	5.22	5.15	5.21	5.18	5.24	5.23	5.25	5.19
256	5.21	5.20	5.19	5.23	5.22	5.17	5.15	5.21	5.22
257	5.20	5.20	5.18	5.25	5.24	5.17	5.20	5.18	5.24
1e-320	5.23	5.21	5.23	5.23	5.21	5.22	5.19	5.21	5.23

Figure 1: Addition timing for double precision floats on Intel i7-6600U

	0.0	1.0	1e10	1e+200	1e-300	1e-42	256	257	1e-320
	Cycle count								
0.0	5.30	5.29	5.28	5.29	5.31	5.32	5.27	5.30	5.31
1.0	5.31	5.31	5.30	5.29	5.31	5.33	5.30	5.29	5.31
1e10	5.33	5.29	5.33	5.31	5.30	5.31	5.30	5.29	5.29
1e+200	5.30	5.28	5.31	5.33	5.33	5.28	5.31	5.29	5.30
1e-300	5.28	5.29	5.33	5.31	5.28	5.31	5.31	5.32	5.31
1e-42	5.30	5.29	5.27	5.31	5.27	5.33	5.32	5.32	5.31
256	5.31	5.30	5.30	5.31	5.31	5.29	5.31	5.31	5.29
257	5.32	5.31	5.26	5.31	5.30	5.30	5.30	5.28	5.27
1e-320	5.33	5.32	5.33	5.32	5.30	5.32	5.32	5.32	5.29

Figure 2: Subtraction timing for double precision floats on Intel i7-6600U

	0.0	1.0	1e10	1e+30	1e-30	1e-41	1e-42	256	257
	Cycle count								
0.0	4.70	4.66	4.71	4.71	4.70	4.69	4.68	4.70	4.69
1.0	4.71	4.70	4.72	4.71	4.71	4.71	4.70	4.70	4.71
1e10	4.70	4.71	4.71	4.71	4.69	4.70	4.72	4.71	4.70
1e+30	4.70	4.71	4.69	4.70	4.71	4.72	4.71	4.71	4.71
1e-30	4.70	4.71	4.74	4.72	4.71	4.73	4.71	4.71	4.70
1e-41	4.69	4.71	4.69	4.70	4.70	4.69	4.68	4.69	4.71
1e-42	4.72	4.72	4.70	4.70	4.70	4.70	4.69	4.70	4.70
256	4.70	4.71	4.73	4.71	4.70	4.69	4.70	4.70	4.70
257	4.71	4.71	4.70	4.68	4.71	4.70	4.69	4.70	4.69

Figure 3: Subtraction timing for single precision floats on Intel i7-6600U

Dividend	Divisor									
	0.0	1.0	1e10	1e+30	1e-30	1e-41	1e-42	256	257	
	Cycle count									
0.0	8.21	8.22	8.20	8.22	8.19	8.21	8.21	8.21	8.21	8.21
1.0	8.20	8.21	8.21	8.20	8.21	141.19	141.23	8.21	8.22	8.22
1e10	8.21	8.20	8.22	8.20	8.20	141.14	141.31	8.20	8.20	8.20
1e+30	8.21	8.20	8.21	8.20	8.20	141.26	141.28	8.19	8.21	8.21
1e-30	8.21	8.21	142.72	8.22	8.21	141.11	141.25	8.20	8.20	8.20
1e-41	8.21	139.87	8.21	8.21	141.19	141.30	141.26	139.89	141.32	141.32
1e-42	8.20	139.74	8.20	8.21	141.29	141.30	141.29	139.75	141.15	141.15
256	8.20	8.18	8.21	8.21	8.21	141.26	141.29	8.21	8.20	8.20
257	8.21	8.21	8.19	8.21	8.20	141.15	141.18	8.21	8.20	8.20

Figure 4: Division timing for single precision floats on Intel i7-6600U

Operand	Cycle count
0.0	8.99
1.0	8.99
1e10	10.42
1e+30	10.41
1e-30	10.42
1e-41	141.13
1e-42	141.32
256	8.99
257	10.42

Figure 5: Square root timing for single precision floats on Intel i7-6600U

	0.0	1.0	1e10	1e+200	1e-300	1e-42	256	257	1e-320
	Cycle count								
0.0	5.17	5.19	5.20	5.18	5.18	5.18	5.19	5.20	5.19
1.0	5.19	5.19	5.19	5.22	5.20	5.17	5.19	5.19	125.40
1e10	5.19	5.16	5.21	5.21	5.21	5.20	5.20	5.21	125.76
1e+200	5.18	5.18	5.17	5.21	5.21	5.19	5.18	5.19	125.44
1e-300	5.19	5.18	5.18	5.19	5.22	5.21	5.18	5.16	5.19
1e-42	5.20	5.20	5.20	5.20	5.20	5.22	5.21	5.21	5.18
256	5.19	5.18	5.17	5.20	5.20	5.17	5.20	5.17	125.66
257	5.19	5.21	5.20	5.22	5.21	5.19	5.18	5.22	125.53
1e-320	5.21	125.43	125.39	125.70	5.18	5.18	125.51	125.68	5.20

Figure 6: Multiplication timing for double precision floats on Intel i7-6600U

	Divisor								
Dividend	0.0	1.0	1e10	1e+200	1e-300	1e-42	256	257	1e-320
	Cycle count								
0.0	9.51	9.51	9.50	9.52	9.51	9.52	9.51	9.50	9.49
1.0	9.51	9.51	12.75	12.75	12.76	12.75	9.51	12.75	151.92
1e10	9.50	9.51	12.76	12.75	12.74	12.74	9.50	12.75	151.65
1e+200	9.52	9.49	12.74	12.75	12.74	12.75	9.52	12.74	151.89
1e-300	9.52	9.51	156.91	12.73	12.74	12.73	9.49	12.75	151.84
1e-42	9.51	9.49	12.74	12.75	12.75	12.75	9.52	12.75	151.88
256	9.52	9.51	12.75	12.76	12.75	12.75	9.50	12.76	151.78
257	9.50	9.51	12.75	12.73	12.76	12.71	9.48	12.75	151.84
1e-320	9.50	143.90	151.88	9.50	151.68	151.82	143.74	151.88	151.84

Figure 7: Division timing for double precision floats on Intel i7-6600U

Operand	Cycle count
0.0	9.46
1.0	9.45
1e10	16.01
1e+200	16.00
1e-300	16.00
1e-42	16.01
256	9.45
257	16.00
1e-320	152.20

Figure 8: Square root timing for double precision floats on Intel i7-6600U

	0.0	1.0	1e10	1e+30	1e-30	1e-41	1e-42	256	257
	Cycle count								
0.0	4.72	4.71	4.71	4.69	4.72	4.70	4.69	4.71	4.70
1.0	4.70	4.72	4.70	4.70	4.71	4.71	4.72	4.71	4.71
1e10	4.70	4.70	4.70	4.69	4.70	4.69	4.70	4.71	4.72
1e+30	4.70	4.71	4.73	4.72	4.72	4.71	4.72	4.71	4.73
1e-30	4.71	4.72	4.69	4.70	4.71	4.71	4.74	4.72	4.71
1e-41	4.69	4.67	4.69	4.70	4.70	4.67	4.67	4.68	4.69
1e-42	4.69	4.69	4.69	4.70	4.68	4.68	4.69	4.68	4.68
256	4.69	4.71	4.70	4.71	4.71	4.71	4.69	4.71	4.70
257	4.71	4.70	4.71	4.70	4.71	4.69	4.70	4.69	4.72

Figure 9: Addition timing for single precision floats on Intel i7-6600U

	0.0	1.0	1e10	1e+30	1e-30	1e-41	1e-42	256	257
	Cycle count								
0.0	4.84	4.86	4.86	4.83	4.82	4.85	4.84	4.84	4.85
1.0	4.85	4.86	4.84	4.84	4.83	124.66	124.59	4.85	4.86
1e10	4.87	4.87	4.85	4.87	4.86	124.91	124.89	4.87	4.86
1e+30	4.85	4.86	4.85	4.85	4.85	124.56	124.85	4.84	4.83
1e-30	4.85	4.86	4.85	4.86	4.84	4.85	4.83	4.87	4.88
1e-41	4.85	124.99	124.62	124.63	4.87	4.84	4.86	124.74	124.64
1e-42	4.83	125.03	124.56	124.64	4.87	4.86	4.86	124.63	124.67
256	4.87	4.87	4.87	4.87	4.87	124.70	124.63	4.85	4.86
257	4.86	4.87	4.84	4.84	4.85	124.66	125.04	4.86	4.87

Figure 10: Multiplication timing for single precision floats on Intel i7-6600U

Intel i7-6600U+FTZ/DAZ

	0.0	1.0	1e10	1e+200	1e-300	1e-42	256	257	1e-320
	Cycle count								
0.0	5.27	5.22	5.24	5.24	5.25	5.25	5.22	5.23	5.24
1.0	5.25	5.22	5.27	5.25	5.27	5.27	5.23	5.25	5.26
1e10	5.25	5.20	5.24	5.23	5.22	5.22	5.24	5.20	5.23
1e+200	5.24	5.20	5.19	5.20	5.20	5.19	5.22	5.20	5.21
1e-300	5.23	5.18	5.18	5.24	5.20	5.23	5.21	5.23	5.19
1e-42	5.23	5.22	5.18	5.20	5.23	5.21	5.24	5.22	5.21
256	5.24	5.24	5.25	5.23	5.25	5.24	5.22	5.27	5.26
257	5.21	5.24	5.22	5.23	5.22	5.24	5.25	5.25	5.24
1e-320	5.23	5.20	5.21	5.25	5.18	5.24	5.20	5.24	5.22

Figure 11: Addition timing for double precision floats on Intel i7-6600U+FTZ/DAZ

	0.0	1.0	1e10	1e+200	1e-300	1e-42	256	257	1e-320
	Cycle count								
0.0	5.31	5.32	5.31	5.27	5.28	5.31	5.32	5.30	5.34
1.0	5.26	5.30	5.25	5.31	5.28	5.27	5.30	5.30	5.27
1e10	5.28	5.30	5.32	5.28	5.28	5.28	5.28	5.28	5.29
1e+200	5.31	5.27	5.30	5.28	5.29	5.31	5.27	5.32	5.29
1e-300	5.26	5.30	5.27	5.28	5.26	5.31	5.30	5.28	5.28
1e-42	5.28	5.30	5.28	5.28	5.29	5.29	5.23	5.29	5.29
256	5.30	5.20	5.27	5.26	5.30	5.25	5.28	5.28	5.29
257	5.25	5.28	5.31	5.30	5.31	5.31	5.31	5.30	5.28
1e-320	5.28	5.31	5.28	5.26	5.28	5.32	5.33	5.31	5.31

Figure 12: Subtraction timing for double precision floats on Intel i7-6600U+FTZ/DAZ

	0.0	1.0	1e10	1e+30	1e-30	1e-41	1e-42	256	257
	Cycle count								
0.0	4.71	4.71	4.71	4.71	4.70	4.70	4.69	4.69	4.70
1.0	4.73	4.72	4.69	4.68	4.69	4.70	4.70	4.70	4.72
1e10	4.72	4.71	4.69	4.71	4.69	4.69	4.70	4.71	4.71
1e+30	4.71	4.70	4.72	4.70	4.72	4.73	4.70	4.71	4.70
1e-30	4.70	4.69	4.71	4.72	4.68	4.70	4.70	4.71	4.69
1e-41	4.70	4.73	4.70	4.71	4.70	4.72	4.71	4.72	4.72
1e-42	4.68	4.69	4.70	4.72	4.70	4.70	4.71	4.68	4.70
256	4.68	4.70	4.70	4.71	4.70	4.69	4.69	4.70	4.70
257	4.71	4.70	4.69	4.71	4.71	4.70	4.70	4.70	4.70

Figure 13: Subtraction timing for single precision floats on Intel i7-6600U+FTZ/DAZ

	Divisor								
Dividend	0.0	1.0	1e10	1e+30	1e-30	1e-41	1e-42	256	257
	Cycle count								
0.0	8.23	8.19	8.20	8.22	8.22	8.21	8.22	8.22	8.20
1.0	8.22	8.22	8.21	8.22	8.22	8.21	8.21	8.22	8.22
1e10	8.22	8.22	8.21	8.21	8.20	8.22	8.21	8.20	8.20
1e+30	8.22	8.20	8.20	8.19	8.22	8.22	8.22	8.22	8.22
1e-30	8.20	8.21	8.20	8.18	8.21	8.22	8.19	8.22	8.21
1e-41	8.21	8.22	8.21	8.20	8.22	8.22	8.22	8.21	8.22
1e-42	8.21	8.20	8.22	8.20	8.20	8.20	8.22	8.21	8.21
256	8.22	8.21	8.21	8.21	8.21	8.22	8.21	8.19	8.20
257	8.21	8.21	8.21	8.18	8.21	8.22	8.22	8.21	8.21

Figure 14: Division timing for single precision floats on Intel i7-6600U+FTZ/DAZ

Operand	Cycle count
0.0	8.99
1.0	8.99
1e10	10.36
1e+30	10.40
1e-30	10.38
1e-41	8.98
1e-42	8.98
256	8.99
257	10.37

Figure 15: Square root timing for single precision floats on Intel i7-6600U+FTZ/DAZ

	0.0	1.0	1e10	1e+200	1e-300	1e-42	256	257	1e-320
	Cycle count								
0.0	5.18	5.19	5.18	5.17	5.18	5.19	5.18	5.21	5.17
1.0	5.17	5.20	5.19	5.17	5.19	5.17	5.19	5.18	5.17
1e10	5.19	5.19	5.18	5.19	5.19	5.15	5.22	5.20	5.16
1e+200	5.17	5.19	5.16	5.17	5.16	5.19	5.18	5.18	5.19
1e-300	5.21	5.22	5.17	5.18	5.18	5.18	5.19	5.18	5.18
1e-42	5.20	5.21	5.17	5.18	5.19	5.20	5.20	5.21	5.19
256	5.21	5.18	5.18	5.19	5.19	5.19	5.18	5.19	5.18
257	5.20	5.18	5.17	5.21	5.20	5.19	5.18	5.20	5.19
1e-320	5.20	5.17	5.21	5.19	5.18	5.19	5.17	5.20	5.20

Figure 16: Multiplication timing for double precision floats on Intel i7-6600U+FTZ/DAZ

Dividend	Divisor								
	0.0	1.0	1e10	1e+200	1e-300	1e-42	256	257	1e-320
	Cycle count								
0.0	9.51	9.52	9.51	9.50	9.52	9.50	9.49	9.50	9.50
1.0	9.50	9.49	12.76	12.73	12.75	12.75	9.50	12.76	9.50
1e10	9.51	9.51	12.75	12.74	12.75	12.74	9.52	12.75	9.52
1e+200	9.51	9.52	12.74	12.73	12.72	12.74	9.51	12.72	9.51
1e-300	9.53	9.51	12.73	12.75	12.76	12.75	9.52	12.76	9.50
1e-42	9.51	9.50	12.74	12.76	12.75	12.73	9.50	12.74	9.51
256	9.51	9.52	12.74	12.75	12.76	12.75	9.51	12.75	9.49
257	9.50	9.51	12.75	12.75	12.76	12.74	9.50	12.76	9.51
1e-320	9.51	9.52	9.52	9.48	9.52	9.51	9.51	9.50	9.52

Figure 17: Division timing for double precision floats on Intel i7-6600U+FTZ/DAZ

Operand	Cycle count
0.0	9.45
1.0	9.46
1e10	16.00
1e+200	16.00
1e-300	16.01
1e-42	15.99
256	9.45
257	15.99
1e-320	9.45

Figure 18: Square root timing for double precision floats on Intel i7-6600U+FTZ/DAZ

	0.0	1.0	1e10	1e+30	1e-30	1e-41	1e-42	256	257
	Cycle count								
0.0	4.70	4.72	4.70	4.72	4.72	4.70	4.72	4.71	4.71
1.0	4.73	4.69	4.69	4.70	4.70	4.69	4.69	4.71	4.71
1e10	4.72	4.73	4.70	4.72	4.70	4.72	4.70	4.72	4.71
1e+30	4.69	4.71	4.74	4.73	4.73	4.71	4.73	4.70	4.70
1e-30	4.71	4.71	4.69	4.69	4.71	4.70	4.72	4.70	4.70
1e-41	4.72	4.72	4.71	4.68	4.71	4.72	4.71	4.73	4.74
1e-42	4.71	4.69	4.72	4.69	4.70	4.71	4.71	4.71	4.69
256	4.69	4.68	4.71	4.70	4.71	4.72	4.73	4.73	4.73
257	4.69	4.69	4.69	4.70	4.72	4.71	4.70	4.71	4.70

Figure 19: Addition timing for single precision floats on Intel i7-6600U+FTZ/DAZ

	0.0	1.0	1e10	1e+30	1e-30	1e-41	1e-42	256	257
	Cycle count								
0.0	4.85	4.85	4.85	4.83	4.85	4.84	4.85	4.85	4.86
1.0	4.83	4.86	4.85	4.83	4.83	4.85	4.84	4.85	4.84
1e10	4.87	4.84	4.85	4.85	4.85	4.86	4.84	4.86	4.86
1e+30	4.84	4.83	4.88	4.87	4.86	4.83	4.83	4.85	4.85
1e-30	4.86	4.85	4.85	4.83	4.83	4.85	4.86	4.86	4.85
1e-41	4.86	4.85	4.85	4.85	4.83	4.85	4.85	4.87	4.87
1e-42	4.83	4.86	4.83	4.84	4.85	4.85	4.84	4.84	4.85
256	4.85	4.85	4.87	4.86	4.87	4.84	4.86	4.84	4.84
257	4.87	4.87	4.86	4.84	4.85	4.84	4.87	4.87	4.87

Figure 20: Multiplication timing for single precision floats on Intel i7-6600U+FTZ/DAZ