Dave Patel

Matmul						
Size 16	3,101,445 cycles:u	# 1.389 GHz	2,787,466 instructions:u	# 0.90insn per cycle	0.006721782 seconds time elapsed	2,787,466/ (0.9 * (1.389 x 10^9)) = 0.002 Percent diff = 66.8%
Size 64	171,258,777 cycles:u	# 1.978 GHz	175,139,462 instructions:u	# 1.02 insn per cycle	0.112350733 seconds time elapsed	175,139,462/ (1.02* (1.978 x 10^9)) = 0.086 Percent diff = 23.41%
Size 256	12,324,562,269 cycles:u	# 1.998 GHz	11,651,186,702 instructions:u	# 0.95 insn per cycle	6.214089248 seconds time elapsed	11,651,186,702/ (0.95* (1.998 x 10^9)) = 6.138 Percent diff =1.22%
Size 1024	802,720,065,263 cycles:u	# 1.999 GHz	771,933,654,950 instructions:u	# 0.96 insn per cycle	402.438067137 seconds time elapsed	771,933,654,950/ (0.96* (1.999 x 10^9)) = 402.24 Percent diff =0.047%
Matmul-mul						
Size 16	818,318 cycles:u	# 0.772 GHz	418,609 instructions:u	# 0.51 insn per cycle	0.025521003 seconds time elapsed	418,609/ (0.51* (0.772 x 10^9)) = 0.001 Percent diff =95%
Size 64	11,507,525 cycles:u	# 1.737 GHz	7,542,391 instructions:u	# 0.66 insn per cycle	0.013643253 seconds time elapsed	7,542,391/ (0.66* (1.737 x 10^9)) = 0.006 Percent diff = 40%
Size 256	1,019,687,691 cycles:u	# 1.990 GHz	307,530,803 instructions:u	# 0.30 insn per cycle	0.580287840 seconds time elapsed	307,530,803 / (0.3* (1.99 x 10^9)) = 0.51 Percent diff = 11.22%
Size 1024	61,189,583,971 cycles:u	# 1.996 GHz	17,002,412,259 instructions:u	# 0.28 insn per cycle	31.431502522 seconds time elapsed	17,002,412,259 / (0.28* (1.996 x 10^9)) =30.42 Percent diff = 3.21%

Amdahls law = Speed up (E) = 1/(1-F) + F/S, where S = 100

Speed up = ExTime w/o E / ExTime w/ E = (402.43806/ 31.4315) = 12.8

12.8 = 1/(1-F) + F/100
Solve for F =
0.9311
93%