

Pc 1

Q1

Part B

Q1 1 0 1 1 0 0 1 0 0 1 1 1 0 1 0 1
 $2^{15} 2^{14} 2^{13} 2^{12} 2^{11} 2^{10} 2^9 2^8 2^7 2^6 2^5 2^4 2^3 2^2 2^1 2^0$

Q2

$$(32768 \times 1) + (16384 \times 0) + (8192 \times 1) + (4096 \times 1) + (2048 \times 0) + (1024 \times 0) + (512 \times 1) + (256 \times 0) + (128 \times 0) + (64 \times 1) + (32 \times 1) + (16 \times 1) + (8 \times 0) + (4 \times 1) + (2 \times 0) + (1 \times 1)$$

$$32768 + 8192 + 4096 + 512 + 64 + 32 + 16 + 4 + 1 = 45691$$

Question 2

1 0 1 1 1 0 . 1 0 0 1 1 1 1 0 1 1
 $2^{-16} 2^{-15} 2^{-14} 2^{-13} 2^{-12} 2^{-11} 2^{-10} 2^{-9} 2^{-8} 2^{-7} 2^{-6} 2^{-5} 2^{-4} 2^{-3} 2^{-2} 2^{-1}$

$$1.525 + 3.05 + 6.103 + 1.220 + 2.44 + 4.88 + 9.77 + ~~0.89~~$$

$$1.96 + 3.90 + 7.81 + 0.016 + 0.03125 + 0.0625 + 0.125 + 0.25 + 0.5$$

Answer is 43.64275