For K and L two knots, let

$$M_{K,L,p} = (S^3 \setminus K) \underset{l \sim l+pm}{\cup} (S^3 \setminus L),$$

where l is the canonical longitude and m the meridian. We compute

$$QV_{2m+1}(M_{K,L,p}) = \frac{2\pi}{2m+1} \log |TV_{2m+1}(M_{K,L,p}, e^{\frac{2i\pi}{2m+1}})|$$

for each possible K and L among the figure eight knot, the 5_2 knot, the 6_1 knot and the $(-2,3,7)$-pretzel knot and $|p| \leqslant 3$. We have that

$$TV_{2m+1}(M_{K,L,p}, q) = \eta_m^4 \sum_{i=1}^{m} [i]^2 \left((-1)^{i-1} q^{(i^2-1)/2}\right)^p J_i(K, q^2) \overline{J_i(L, q^2)}$$

where $\eta_m = \frac{2\sin(\frac{2\pi}{2m+1})}{\sqrt{2m+1}}$ and $[n] = \frac{q^n - q^{-n}}{q - q^{-1}}$.
The family of colored Jones polynomials values $\{J_i(K, q^2)\}_{1 \leqslant i \leqslant m}$ of these knots are computed in linear time in m using the known q-difference relations for these knots. At $m = 1000$, we get the following table of values. In all cases, $QV_{2001}(M_{K,L,p})$ comes within 0.4% of the actual volume.

K	L	p	$QV_{2001}(M_{L,K,p})$	$\mathrm{Vol}(M_{L,K,p})$
4_1	4_1	-3	4.07384310	4.05976643
		-2	4.07398752	
		-1	4.07408105	
		0	4.07411352	
		1	4.07408105	
		2	4.07398752	
		3	4.07384310	
	5_2	-3	4.87080285	4.85800530
		-2	4.87103827	
		-1	4.87125583	
		0	4.87144129	
		1	4.87157816	
		2	4.87165099	
		3	4.87165022	
	6_1	-3	5.20554618	5.19384644
		-2	5.20579242	
		-1	5.20601218	
		0	5.20618659	
		1	5.20629554	
		2	5.20632364	
		3	5.20626653	

K	L	p	$QV_{2001}(M_{L,K,p})$	$\mathrm{Vol}(M_{L,K,p})$
4_1	$(-2,3,7)$	-3	4.86654717	4.85800530
		-2	4.86669111	
		-1	4.86684156	
		0	4.86699909	
		1	4.86716435	
		2	4.86733804	
		3	4.86752097	
5_2	5_2	-3	5.66886952	5.65624418
		-2	5.66905660	
		-1	5.66918060	
		0	5.66922421	
		1	5.66918060	
		2	5.66905660	
		3	5.66886952	
	6_1	-3	6.00364959	5.99208532
		-2	6.00381775	
		-1	6.00390081	
		0	6.00388436	
		1	6.00377145	
		2	6.00358087	
		3	6.00333822	
	$(-2,3,7)$	-3	5.66425507	5.65624418
		-2	5.66441833	
		-1	5.66459000	
		0	5.66477092	
		1	5.66496202	
		2	5.66516440	
		3	5.66537927	
6_1	6_1	-3	6.33814464	6.32792646
		-2	6.33838441	
		-1	6.33854811	
		0	6.33860671	
		1	6.33854811	
		2	6.33838441	
		3	6.33814464	
	$(-2,3,7)$	-3	5.99862065	5.99208532
		-2	5.99878023	
		-1	5.99894794	
		0	5.99912463	
		1	5.99931123	
		2	5.99950883	
		3	5.99971868	
$(-2,3,7)$	$(-2,3,7)$	-3	5.66790495	5.65624418
		-2	5.66850076	
		-1	5.66900980	
		0	5.66922421	
		1	5.66900980	
		2	5.66850076	
		3	5.66790495	