E 4

Q1) Find the exact value of $\sin(19\pi/12)$

Q2) If α is a quadrant II angle with $\sin(\alpha) = 5/13$ and β is a quadrant III angle with $\tan(\beta) = 2$, find $\sin(\alpha - \beta)$. 774

Q3) Express $\cos(3\theta)$ as a polynomial in terms of $\cos\theta$ 776

Q4) Verify the identity: $\sin(2\theta) = \dfrac{2\tan(\theta)}{1+\tan^2(\theta)}$

Q5) Rewrite $\sin^2\theta\cos^2\theta$ as a sum and difference of cosines to the first power. 778

Q6) Let $f(x) = \cos(2x) - \sqrt{3}\sin(2x)$.
Find a formula for $f(x)$ in the form $C(x) = A\cos(\omega x + \phi) + B$ for $\omega > 0$ 798
and graph $C(x)$

Q7) Use the following figure to find a value for $\arctan(1) + \arctan(2) + \arctan(3)$.
A calculator solution is not acceptable. 847