**MHF4U Proofs: Practice Sheet**

1. $\frac{1+cosθ}{sinθ}+\frac{sinθ}{1+cosθ}=2cscθ$ 2. $\frac{cscθ+cotθ}{tanθ+sinθ}=cotθcscθ$

3. $\frac{2tanθ}{1+ tan^{2}θ}=sin⁡(2θ)$ 4. $secθ-tanθsinθ=\frac{1}{secθ}$

5. $csc^{2}θtan^{2}θ-1=tan^{2}θ$ 6. $(sinθ+cosθ)^{2}+(sinθ-cosθ)^{2}=2$

7. $\frac{cosθ+1}{sin^{3}θ}=\frac{cscθ}{1-cosθ}$ 8. $\frac{sinθ+tanθ}{1+secθ}=\frac{1}{cscθ}$

9. $1+cos^{4}θ-sin^{4}θ=2cos^{2}θ$ 10. $\frac{1-sinθ}{1+sinθ}=(secθ-tanθ)^{2}$

11. $\frac{tanθ}{1+tan^{2}θ}=sinθcosθ$ 12. $\frac{1}{1-cosθ}+\frac{1}{1+cosθ}=2csc^{2}θ$