## Verifying Trig Identities (Day 2)

1. $\left(\sec ^{2} \theta-1\right) \cos ^{2} \theta=\sin ^{2} \theta$
2. $\sec ^{2} \theta\left(1-\cos ^{2} \theta\right)=\tan ^{2} \theta$
3. $\sin \theta-\sin \theta \cos ^{2} \theta=\sin ^{3} \theta$
4. $\csc \theta-\cos \theta \cot \theta=\sin \theta$
5. $\cot ^{2} \theta \csc ^{2} \theta-\cot ^{2} \theta=\cot ^{4} \theta$
6. $\tan \theta \csc ^{2} \theta-\tan \theta=\cot \theta$
7. $\frac{\sec \theta}{\sin \theta}-\frac{\sin \theta}{\cos \theta}=\cot \theta$
8. $\frac{\sin \theta}{1-\cos \theta}+\frac{1-\cos \theta}{\sin \theta}=2 \csc \theta$
9. $\frac{\cos \theta}{1+\sin \theta}+\tan \theta=\sec \theta$
10. $\frac{\sin \theta}{1-\cot \theta}+\frac{\cos \theta}{1-\tan \theta}=\sin \theta+\cos \theta$
11. $\frac{1}{1-\tan ^{2} \theta}+\frac{1}{1-\cot ^{2} \theta}=1$
12. $\frac{1}{\csc \theta+1}+\frac{1}{\csc \theta-1}=2 \sec ^{2} \theta \sin \theta$
13. $(\csc \theta-\cot \theta)(\csc \theta+\cot \theta)=1$
14. $\cos ^{4} \theta-\sin ^{4} \theta=\cos ^{2} \theta-\sin ^{2} \theta$
15. $\frac{1}{1-\sin \theta}+\frac{1}{1+\sin \theta}=2 \sec ^{2} \theta$
16. $\frac{\cos \theta}{1+\sin \theta}+\frac{\cos \theta}{1-\sin \theta}=2 \sec \theta$
17. $\csc ^{4} \theta-\cot ^{4} \theta=2 \cot ^{2} \theta+1$
