1. Verify that $(\sin(x)+\cos(x))^2+(\sin(x)-\cos(x))^2=2$
2. Verify that $\csc(x)-\sin(x)=\cot(x)\cos(x)$
3. Verify that $\frac{\cos(x+y)}{\sin(x-y)}=\frac{1-\tan(x)\tan(y)}{\tan(x)-\tan(y)}$
4. Simplify $\frac{\cos^2(x)}{1-\sin(x)}$
5. Simplify $(\csc(x)+1)(\csc(x)-1)$
6. Find $\cos\left(-\frac{\pi}{12}\right)$
7. Find $\cos(x+y)$. $\sin(x)=\frac{1}{\sqrt{2}}$ and $\sin(y)=\frac{1}{2}$. x is in quadrant II, while y is in quadrant I.
8. Find $\sin\left(\frac{73\pi}{12}\right)$
9. Find $\sin(x+y)$. $\sin(x)=\frac{1}{\sqrt{2}}$ and $\sin(y)=\frac{1}{2}$. x is in quadrant II, while y is in quadrant I.
10. Find $\sin\left(-\frac{\pi}{6}\right)\cos\left(-\frac{\pi}{3}\right)+\cos\left(-\frac{\pi}{6}\right)\sin\left(-\frac{\pi}{3}\right)$
11. Graph $y=-3\cos\left(\frac{1}{2}x\right)$
12. Graph $y=\sin(4x)$
13. Graph $y=\cos(6\pi x)$
14. Graph $y=2+\sin\big(2(x-\pi)\big)$
15. Graph $y=\sec\left(\frac{1}{2}x\right)$
16. Graph $y=\csc\left(2\left(x-\frac{\pi}{2}\right)\right)$
17. Graph $y=3-\tan(x)$
18. Graph $y=42\cot(x)$
19. Graph $y=x+\sin(x)$
20. Graph $y=x^2+\cos(x)$
21. Graph $y=\sec(x)+\csc(x)$
22. Find an equation for each of the graphs below.