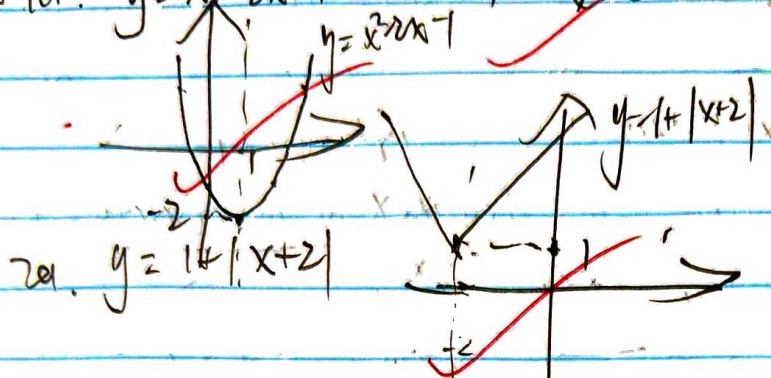


Recitation 0. 1 Jul

1a. $y = x^2 - 2x - 1 = x^2 - 2x + 1 - 2 = (x-1)^2 - 2$



3a) $f(x) = \frac{x^3 + 3x}{1 - x^4}$ $f(-x) = \frac{-x^3 - 3x}{1 - x^4} = -f(x)$

\therefore odd

b) $f(x) = \sin^2 x$ $f(-x) = \sin^2(-x) = \sin^2 x = f(x)$

\therefore even

c) $f(x) = \frac{\tan x}{1+x^2}$ $f(-x) = \frac{\tan(-x)}{1+(-x)^2} = \frac{-\tan x}{1+x^2} = -f(x)$

\therefore odd

6a) $\sin x + \sqrt{3} \cos x$
 $= 2 \left(\frac{1}{2} \sin x + \frac{\sqrt{3}}{2} \cos x \right)$
 $= 2 \left(\sin x \cos \frac{\pi}{6} + \cos x \sin \frac{\pi}{6} \right)$
 $= 2 \sin \left(x + \frac{\pi}{6} \right)$

7a) $y = 3 \sin(2x - \pi)$

period: $T = \frac{2\pi}{2} = \pi$

amplitude: 3

phase angle: $-\frac{\pi}{2}$

