Name Answers

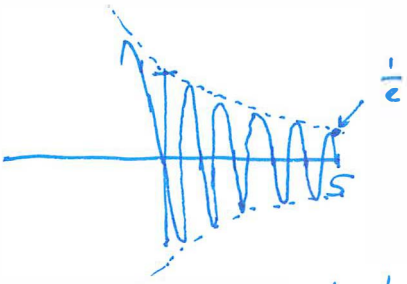
EE3032-3 – Dr. Durant – Quiz 1
Fall 2017, Week 1

1. ***Sketch*** the ***real*** part of $x(t) = e^{j\frac{\pi}{2}} e^{(-0.2+j2\pi)t}$. It will probably be helpful to rearrange some terms and apply Euler's Formula. Focus on correct frequency, correct phase, showing generally correct rise or decay pattern.
2. Evaluate $y(t) = \int_{-\infty}^{x} u(\tau+1) + \delta(\tau) - u(\tau-1)\, d\tau$

shift left = $-\sin$

(1) $x(t) = e^{-0.2t} e^{j\left(2\pi t + \frac{\pi}{2}\right)} = e^{-0.2t}\left(\cos\left(2\pi t + \frac{\pi}{2}\right) + j\sin\left(2\pi t + \frac{\pi}{2}\right)\right)$

$\mathrm{Re}(x(t)) = -e^{-0.2t}\sin(2\pi t)$



← glows w/o bound in $-x$

(2) $y(t) = \begin{cases} 0, & t < -1 \\ r(t+1), & -1 < t < 0 \\ r(t+1)+1, & 0 < t < 1 \\ 3, & t > 1 \end{cases}$

Note $r(t+1) = t+1$ within the ranges given above.

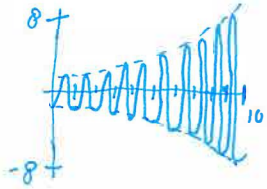
alternately: $y(t) = r(t+1) + u(t) - r(t-1)$

Name Answers

EE3032-4 – Dr. Durant – Quiz 1
Fall 2017, Week 1

1. (5 points) ***Sketch*** the ***real*** part of $x(t) = e^{j\pi}e^{(+0.2+j2\pi)t}$. It will be helpful to rearrange some terms and apply Euler's Formula. Focus on correct frequency, correct phase, and showing generally correct rise or decay pattern.
2. (5 points) ***Sketch*** $y(t) = \frac{d}{dt}(r(t) + u(t-1))$.

(1) $Re(x(t)) = Re(-e^{(0.2+j2\pi)t}) = -e^{0.2t}\cos(2\pi t)$



(2) $y(t) = u(t) + \delta(t-1)$