Yunus Emre Fertun

Q3) $g(t) = \sum_{k=0}^{\infty} (t+2)\, f(t-k+1)$ $\quad t \in (-\frac{1}{2}, -\frac{13}{2})$

a)

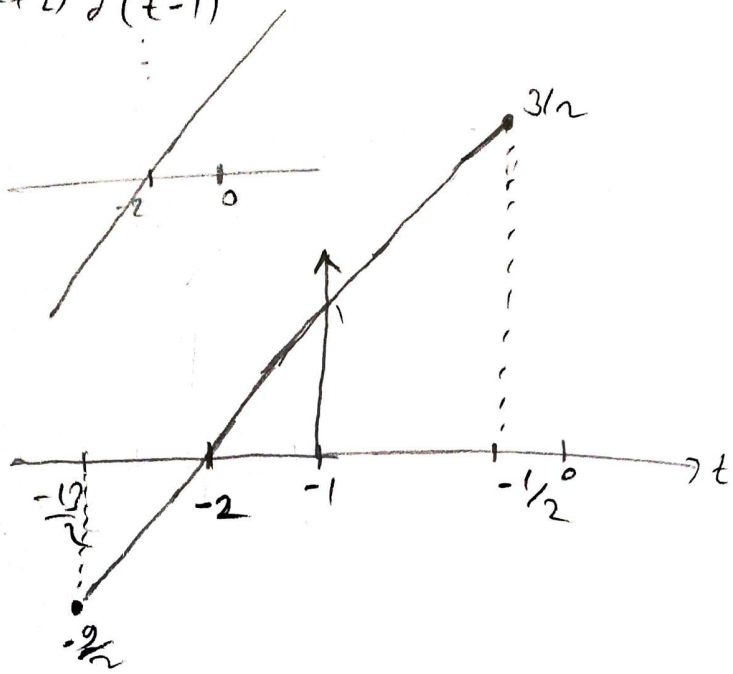
$k=0$ $\quad (t+2)\, f(t+1)$ → ✓

$k=1$ $\quad (t+2)\, f(t)$

$k=2$ $\quad (t+2)\, f(t-1)$

$\vdots$

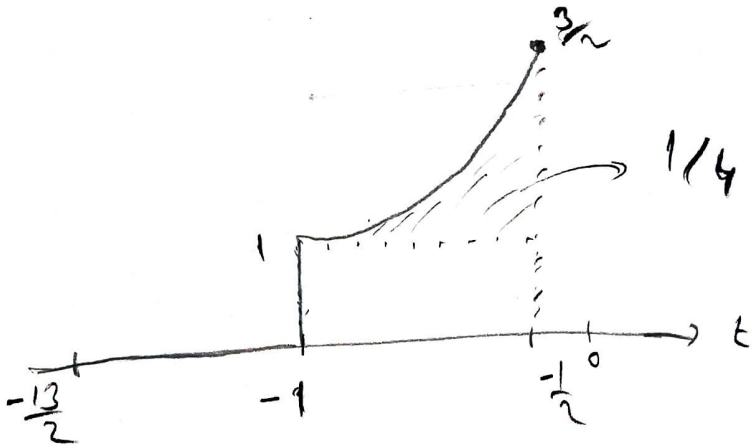
$t+2 \Rightarrow$



$g(t) =$

b) $\int_{-\infty}^{t} g(s)\, ds$ $\quad , t \in (-\frac{1}{2}, \frac{-13}{t})$

integral of dirac delta is unit step



Pose 3

Q4) LTI system

$2\ \underline{3}\ 1\ 1 \rightarrow \underline{4}\ 4\ 2\ 5$

$\underline{0}\ -1\ 3 \rightarrow \underline{0}\ 1\ 2\ -1$

$3\ 0\ \underline{1}\ 1 \rightarrow ?$

$$-1 \times \begin{bmatrix} 2 & \underline{3} & 1 & 1 \\ 0 & -1 & \underline{3} & 0 \end{bmatrix} \rightarrow \begin{bmatrix} \underline{4} & 4 & 2 & 5 \\ \underline{0} & 1 & 2 & -1 \end{bmatrix}$$

2 left shift, -1×

$$+$$

$3\ \underline{0}\ 1\ 1 \rightarrow -1\ \underline{2}\ 5\ 2\ 5$

$3\ 0\ \underline{1}\ 1 \rightarrow -1\ 2\ \underline{5}\ 2\ 5$

ANSWER

$$-1 \left(0\ 1\ \underline{3}\ -1\ 0\ 2 \right)$$

$-1\ 2\ 5\ 2\ 5$

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