Bài 1: Xác định các tín hiệu không tuần hoàn, hoặc giá trị chu kỳ cơ sở của các tín hiệu tuần hoàn

a) $x(t) = \cos\frac{\pi}{3}t + \sin\frac{\pi}{4}t$

b) $x(t) = \cos t + \sin\sqrt{2}\,t$

c) $x(t) = e^{j[(\pi/2)t - 1]}$

d) $x[n] = \cos\frac{\pi}{3}n + \sin\frac{\pi}{4}n$

e) $x[n] = e^{j(\pi/4)n}$

Bài 2: Determine whether the following signals are energy signals, power signals, or neither.

a) $x(t) = A\cos(\omega_0 t + \theta)$

b) $x(t) = tu(t)$

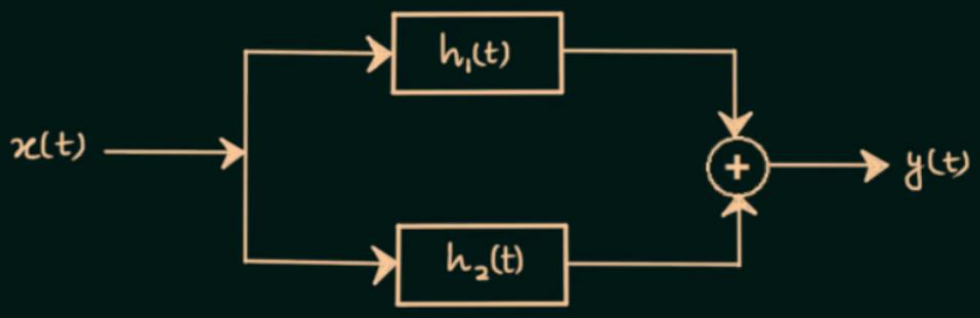
Bài 3:

Compute the output $y(t)$ for a continuous-time LTI system whose impulse response $h(t)$ and the input $x(t)$ are given by

$$h(t) = e^{-\alpha t}u(t) \qquad x(t) = e^{\alpha t}u(-t) \qquad \alpha > 0$$

Bài 4:

Question: Consider the parallel combination of two LTI systems shown in the figure.



The impulse responses of the systems are

$h_1(t) = 2\delta(t+2) - 3\delta(t+1)$

$h_2(t) = \delta(t-2)$

If the input x(t) is a unit step signal, then the energy of y(t) is _____

Bài 5: