1. On periodicity of signals:
   (a) \( x(t) = \sum_{n=-\infty}^{\infty} e^{-(2t-n)}u(2t-n) \)
   (b) \( x(t) = E\{\cos(4\pi t)u(t)\} \)
   (c) \( x(t) = E\{\sin(4\pi t)u(t)\} \)
   (d) \( x(t) = [\cos(2t - \frac{\pi}{3})]^2 \)
   (e) \( x(t) = e^{j(\pi t-1)} \)
   (f) \( x[n] = \cos\left(\frac{\pi}{3}n\right)\cos\left(\frac{\pi}{4}n\right) \)

2. On evenness/oddness of signals. Determine and sketch the even and odd parts of the signal shown in Fig. ??.

![Figure 1: Problem 2](image)

3. On signal transformations (scaling and shifting). A discrete-time signal is shown in Fig. ??.
   Sketch and label carefully each of the following signals.
   (a) \( x[3 - n] \)
4. On signal energy and power. Sketch the following signals and say whether they are energy signals or power signals.

(a) \( e^{(-1-j2\pi)t}u(t-1)u(9-t) \)
(b) \( u(t) - u(t-4) \)
(c) \( \sin(\omega t)u(t-1)u(9-t) \)
(d) \( \text{ramp}(t) - \text{ramp}(t-3) \)
(e) \( (2 + e^{-6t})u(t) \)
(f) \( (2 + e^{4t})u(t) \)

Figure 2: Problem 3