1. Determine whether the following signals are periodic. Find the fundamental period?

$$1.x[n] = cos(8/15\pi n) \quad (1)$$
$$2.x[n] = cos(7/15\pi n) \quad (2)$$
$$3.x(t) = cos(4t) + sin(6t) \quad (3)$$
$$4.x(t) = cos(t)u(t) \quad (4)$$
$$5.x[n] = cos(0.01\pi n) \quad (5)$$
$$6.x[n] = cos(3\pi n) \quad (6)$$
$$7.x[n] = sin(3n) \quad (7)$$
$$8.x[n] = cos(n/8)cos(\pi n/8) \quad (8)$$
$$9.x[n] = cos(2\pi n/5) + cos(cos2\pi n/7) \quad (9)$$
$$10.x(t) = 2cos(100\pi t) + 5sin(50t) \quad (10)$$
$$11.x(t) = 2cos(t) + 3cos(t/3) \quad (11)$$

2. Find and sketch the even and odd component of the following:

$$1.x[n] = e^{-(n/4)}u(n) \quad (12)$$
$$2.x(t) = t \;\; for(0 \leq t \leq 1) and \;\; x(t) = 2 - t for(1 \leq t \leq 2) \quad (13)$$
$$3.x(t) = cos^2(\pi t/2) \quad (14)$$
$$4.x(t) = e^{jt} \quad (15)$$

3. Evaluate the following integrals

$$\int_{-1}^{1} (.5t^2 + 5)\delta(t)dt \quad (16)$$
$$\int_{-2}^{2} (sin\pi t + tcos^2\pi t))\delta(t-1)dt \quad (17)$$
$$\int_{-3}^{-1} e^{-t}\delta(t) \quad (18)$$

4. 1.26 and 1.27 from Oppenheim