4. Determine if x(n) = cos(pi\*n/4)cos(pi\*n/4) is periodic. If periodic, calculate period.

Not periodic

Periodic, π/3

Periodic, 2π/3

Periodic, π/4

5. Determine if x(n) = cos(3t + pi/4) is periodic. If periodic, calculate period.

Not periodic

Periodic, π/2

Periodic, 8

Periodic, π/8

6. For the RC circuit shown in the figure, find the input/output differential equation.

d3y(t)/dt3 + 2R2C2 d2y(t)/dt2 + 3RC dy(t)/dt + y(t) = x(t)

R3C3d3y(t)/dt3 + 5R2C2 d2y(t)/dt2 + 6RC dy(t)/dt + y(t) = x(t)

RCd3y(t)/dt3 + 6R2C2 d2y(t)/dt2 + 5RC dy(t)/dt + 2y(t) = x(t)

R3C3d3y(t)/dt3 + 5 d2y(t)/dt2 + RC dy(t)/dt + y(t) = 3x(t)