```
function [X_t] = kinematicModel(X_tm1, deltaEncoderR, deltaEncoderL)

    % Some useful parameters
    robotRadius = 0.2;
    wheelRadius = 0.1;
    pulsesPerRevolution = 4096;
    pulsesToMeters = 2*pi*wheelRadius/pulsesPerRevolution;

    % Calcualate Distance travelled by each wheel based on wheel
      angular
    % velocity in pulses/s
    wheelDistanceR = deltaEncoderR*pulsesToMeters;
    wheelDistanceL = deltaEncoderL*pulsesToMeters;

    % Calculate the distance travelled by robot center deltaS, and the
    % angle rotated about center deltaTheta
    deltaS = (wheelDistanceR+wheelDistanceL)/2;
    deltaTheta = (wheelDistanceR-wheelDistanceL)/(2*robotRadius);

    % Update States
    theta_t = X_tm1(3) + deltaTheta;
    x_t = X_tm1(1) + deltaS*cos(X_tm1(3) + deltaTheta/2);
    y_t = X_tm1(2) + deltaS*sin(X_tm1(3) + deltaTheta/2);

    % Set State Vector
    X_t = [ x_t y_t theta_t];
end
```