$C_1 = a_1 + b_1 x + c_1 x^2 + d_1 x^3$
$C_2 = a_2 + b_2 x + c_2 x^2 + d_2 x^3$
$C_3 = a_3 + b_3 x + c_3 x^2 + d_3 x^3$
$C_4 = a_4 + b_4 x + c_4 x^2 + d_4 x^3$
$C_5 = a_5 + b_5 x + c_5 x^2 + d_5 x^3$
$C_6 = a_6 + b_6 x + c_6 x^2 + d_6 x^3$
$C_7 = a_7 + b_7 x + c_7 x^2 + d_7 x^3$

These are the 7 intervals, each with 4 unknown values. Thus, there is 28 unknown values.

$C_1(0) = 0$
$C_1(1) = C_2(1) = 50$
$C_2(2) = C_3(2) = 106$
$C_3(3) = C_4(3) = 204$
$C_4(4) = C_5(4) = 258$
$C_5(5) = C_6(5) = 292$
$C_6(6) = C_7(6) = 320$
$C_7(7) = 355$

- 1st conditon, matches the data points

- 2nd condition, continuous, the ends of the interval are conected

- This is $8 + 6 = 14$ conditons out of 28 needed.

- 3rd conditon, the first dirivative is continuous

$C_1'(1) = C_2'(1)$
$C_2'(2) = C_3'(2)$
$C_3'(3) = C_4'(3)$
$C_4'(4) = C_5'(4)$
$C_5'(5) = C_6'(5)$
$C_6'(6) = C_7'(6)$

- Now have 20 conditons

-4th condition, second dirivatives are continuous

$$C_1''(1) = C_2''(1)$$
$$C_2''(2) = C_3''(2)$$
$$C_3''(3) = C_4''(3)$$
$$C_4''(4) = C_5''(4)$$
$$C_5''(5) = C_6''(5)$$
$$C_6''(6) = C_7''(6)$$

-Now have 26 conditions

-5th condition, 2nd derivative at the end points = 0

$$C_1''(0) = 0 \qquad C_7''(7) = 0$$

-Now we have 28 conditions for all 28 unknown variables.