13) $p(x) = 3 + 5x + x^2$

$A p_0(x) + B p_1(x) + C p_2(x) = 3 + 5x + x^2$

$A(1) + B(x) + C\left(\frac{3x^2 - 1}{2}\right) = 3 + 5x + x^2$

$B = 5$

$C \cdot \frac{3}{2} = 1$

$C = \frac{2}{3}$

$A - \frac{C}{2} = 3$

$A - \frac{\frac{2}{3}}{2} = 3$

$A - \frac{1}{3} = 3$

$A = \frac{10}{3}$

$p(x) = \frac{10}{3} p_0(x) + 5 p_1(x) + \frac{2}{3} p_2(x)$