3
b

$$p_n(x) = 1 + (e-1)x + (e^2 - e)(x-1) + \cdots$$
$$\cdots + \frac{(e^4 - e^2)}{2}(x-2)$$

$$= 1 + (e-1)x + e(e-1)(x-1) + \cdots$$
$$\cdots + \frac{e^2}{2}(e^2 - 1)(x-2)$$
$$\overset{!}{=} -\frac{1}{8}(x-1)(x-2)(x-4) + \cdots$$
$$\cdots + \frac{1}{3}e\,x(x-2)(x-4) + \cdots$$
$$\cdots + \frac{1}{4}e^2\,x(x-1)(x-4) + \cdots$$
$$\cdots - \frac{1}{14}e^4\,x(x-1)(x-2)$$

... IF THIS IS NOT TRUE AFTER SIMPLIFICATION I DID SOMETHING WRONG

$f(x) = e^x$, $x_0 = 0$, $x_1 = 1$, $x_2 = 2$, $x_3 = 4$

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