4

$$l_2(x) = \frac{1}{24} x(x+1)(x-1)(x-2) = \frac{1}{24} x(x+1)(x^2-3x+2)$$

$$= \frac{1}{24} x(x^3 + x^3 - 3x^2 - 3x + 2x + 2)$$

$$= \frac{1}{24}(x^4 - 2x^3 - x^2 + 2x)$$

$$l_2(x_0) = \frac{1}{24}\left((-2)^4 - 2(-2)^3 - (-2)^2 + 2(-2)\right) = \frac{16}{24} = \frac{2}{3} \neq P(x_0)$$

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xxx

$$l_1(x) = \frac{x-x_0}{x_1-x_0} \cdot \frac{x-x_3}{x_1-x_2} \cdot \frac{x-x_2}{x_1-x_3} \cdot \frac{x-x_4}{x_1-x_4}$$

$$= \frac{x+2}{-1+2} \cdot \frac{x-0}{-1-0} \cdot \frac{x-1}{-1-1} \cdot \frac{x-2}{-1-2}$$

$$= -\frac{1}{6} x(x+2)(x-1)(x-2) = -\frac{1}{6} x(x+2)(x^2-3x+2)$$

$$l_1(x) = -\frac{1}{6}(x^4 - x^3 - 4x^2 + 4x)$$

$$l_1(x_0) = -\frac{1}{6}\left((-2)^4 - (-2)^3 - 4(-2)^2 + 4(-2)\right) = -\frac{32}{6} = -\frac{16}{3} \neq P(x_0)$$

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