- $f : \mathbb{R}^2 \to \mathbb{R}$
- $f(x, y) = e^{x^2 - y^2}$

1. $P_1(x, y) = 1 + 2(x - 1) + 2(y - 1)$
2. $\frac{4}{10} = (1 + \frac{1}{10})^2 - (1 - \frac{1}{10})^2$

$P_1(1 + \frac{1}{10}, 1 + \frac{1}{10}) = 1 + 2(1 + \frac{1}{10} - 1) + 2(1 + \frac{1}{10} - 1) =$
$1 + \cancel{2}(\frac{1}{\cancel{10}^5}) + \cancel{2}(\frac{1}{\cancel{10}^5}) =$
$1 + \frac{2}{5} = \frac{7}{5}$