



STEP II, 2005, Q1

- 1 Find the three values of x for which the derivative of $x^2e^{-x^2}$ is zero.

Given that a and b are distinct positive numbers, find a polynomial $P(x)$ such that the derivative of $P(x)e^{-x^2}$ is zero for $x = 0$, $x = \pm a$ and $x = \pm b$, but for no other values of x .



NextStepMaths.com

To view mark schemes, fully worked solutions and examiner's comments, and for more details about tutoring and other services offered, go to [NextStepMaths.com](https://www.NextStepMaths.com)



NextStepMaths.com

To view mark schemes, fully worked solutions and examiner's comments, and for more details about tutoring and other services offered, go to [NextStepMaths.com](https://www.NextStepMaths.com)