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| **Calculating Probabilities with the Normal Distribution** |
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| **Setting:** | Seminar |
| **Preparation duration:** | 30 minutes |
| **Level:** | Level 4 |
| **Activity duration:** | 60 minutes |
| **Additional guidance:** | This seminar is available in worksheet (Calculating Probabilities with the Normal Distribution.docx) and/or slide presentation (Calculating Probabilities with the Normal Distribution.pptx) form.Students will be demonstrated five methods for calculating probabilities from the Normal distribution. This will be followed by an activity where students will practise using the method of their choice. |
| **Outcomes:** * Consolidate students’ understanding of the link between probabilities of Normal random variables and area under the bell curve.
* Broaden the tools and methods available to students for calculating probabilities from the Normal distribution.
* Demonstrate the manipulations required when using restricted tools, such as Normal tables
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| **Pre-task preparation:** * If required, familiarise yourself with the five methods available for calculating probabilities from the Normal distribution.
* Choose to remove or add any new methods that you would like to share with the students.
* Request that students bring mobile phones, laptops, tablets, etc, to the seminar.
* If required, print out an appropriate number of worksheets for the seminar.
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**Steps to implement the activity:** 1. Remind students of the relationship between Normal probabilities and areas under the bell curve.
2. For each method, provide students with the time to download, install and explore any apps, websites or calculators that you introduce.
3. Allow the students at least 20 minutes to work on the activity at the end of the seminar using their method of choice. All answers are available on the last slide of slide presentation.

**Extension activities:** * Ask students to confirm their answers to the activity by using an alternative method.
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