Probability & Statistics 1

A-Level Mathematics · Vocabulary in context

Word	Example
Probability & Statistics /ˌprɒbə'bɪlɪti ænd stə'tɪstɪks/	**Probability & Statistics** studies chance and data.
stem-and-leaf diagram /stem ænd liːf 'daɪəgræm/	A **stem-and-leaf diagram** shows every value in order.
back-to-back /bæk tə bæk/	A **back-to-back** stem-and-leaf diagram compares two groups.
box-and-whisker plot /bɒks ænd 'wɪskə plɒt/	A **box-and-whisker plot** shows the median, the quartiles and the smallest and largest values.
histogram /'hɪstəgræm/	Draw a **histogram** with the bars touching.
cumulative frequency /'kjuːmjʊlətɪv 'friːkwənsi/	**Cumulative frequency** is a running total.
frequency density /'friːkwənsi 'densɪti/	**Frequency density** is frequency divided by class width.
measure of central tendency /'meʒə ɒv 'sentrəl 'tendənsi/	The median is a **measure of central tendency**.
central tendency /'sentrəl 'tendənsi/	The mean, median and mode are measures of **central tendency**.
mean /miːn/	The **mean** is the total divided by the number of values.
median /'miːdiːən/	Put the values in order before you find the **median**.

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mode /məʊd/	The **mode** is the most common value.
variation /ˌveərɪ'eɪʃn/	There is a lot of **variation** in the students' heights.
range (of data) /reɪndʒ/	The **range (of data)** is the largest value minus the smallest.
interquartile range /ˌɪntə'kwɔːtaɪl reɪndʒ/	Subtract the lower quartile from the upper for the **interquartile range**.
standard deviation /'stændəd ˌdiːvɪ'eɪʃn/	A larger **standard deviation** means the values are more spread out.
variance /'veərɪəns/	The **variance** is the square of the standard deviation.
mid-interval value	Use the **mid-interval value** of each class to estimate the mean.
Coding /'kəʊdɪŋ/	**Coding** with $y = x - 100$ makes the numbers smaller and easier to add. $y = x - 100$
assumed mean /ə'sjuːmd miːn/	Using 50 as an **assumed mean** makes the sums easier. 50
permutation /ˌpɜːmjuː'teɪʃn/	In a **permutation**, changing the order changes the arrangement.
combination /ˌkɒmbɪ'neɪʃn/	In a **combination**, the order of chosen items does not matter.
mutually exclusive events /'mjuːtʃuːəli eks'kluːsɪv ɪ'vents/	Rolling a 2 and rolling a 5 are **mutually exclusive events**. 2 5
independent events /ˌɪndɪ'pendənt ɪ'vents/	Two coin tosses are **independent events**.

Word	Example
conditional probability /kənˈdɪʃənl ˌprɒbəˈbɪlɪti/	Find the **conditional probability** using only the chosen group.
discrete random variable /dɪˈskriːt ˈrændəm ˈveərɪəbl/	The number of heads in three coin flips is a **discrete random variable**.
probability distribution table /ˌprɒbəˈbɪlɪti ˌdɪstrɪˈbjuːʃn ˈteɪbl/	A **probability distribution table** lists each value and its probability.
expectation /ekspɪkˈteɪʃn/	The **expectation** of a fair die's score is 3.5. 3.5
binomial distribution /baɪˈnəʊmɪəl ˌdɪstrɪˈbjuːʃn/	A **binomial distribution** counts the number of heads in 20 coin tosses. 20
geometric distribution /ˌdʒiːəˈmetrɪk ˌdɪstrɪˈbjuːʃn/	The **geometric distribution** counts the throws until the first six. 6
normal distribution /ˈnɔːml ˌdɪstrɪˈbjuːʃn/	A **normal distribution** has a symmetric bell-shaped density curve.
continuous random variable /kənˈtɪnjuːəs ˈrændəm ˈveərɪəbl/	A person's height is a **continuous random variable**.
standardisation /ˌstændədaɪˈzeɪʃn/	**Standardisation** turns X into $Z = (X - \mu)/\sigma$. X $Z = (X - \mu)/\sigma$
approximation /əˌprɒksɪˈmeɪʃn/	An **approximation** simplifies a calculation when a change is small.
continuity correction /kɒntɪˈnjuːɪti kəˈrekʃn/	Use a **continuity correction**: $P(X \leq 5)$ becomes $P(Y < 5.5)$. $P(X \leq 5)$ $P(Y < 5.5)$

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