General Mathematics

Exam Planner

Your guide for exam goal-setting, preparation and success.

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Subject: General Mathematics

EXAM DATE ----------

GOAL ----------

Topic: Data Analysis, Probability and Statistics	Do I have it in my notes?	Note-making deadline	Memorising deadline
Construct frequency tables and bar charts and use them to describe and interpret the distributions of categorical variables			
Answer statistical questions that require a knowledge of the distribution(s) of one or more categorical variables			
Construct stem and dot plots, boxplots, histograms and appropriate summary statistics and use them to describe and interpret the distributions of numerical variables			
Answer statistical questions that require a knowledge of the distribution(s) of one or more numerical variables			
Solve problems using z-scores and the 68–95–99.7% rule			
Construct two-way tables and use them to identify and describe associations between two categorical variables			
Construct parallel boxplots and use them to identify and describe associations between a numerical variable and a categorical variable			
Construct scatterplots and use them to identify and describe associations between two numerical variables			
Calculate the correlation coefficient, r, and interpret it in the context of the data			
Answer statistical questions that require a knowledge of the associations between pairs of variables			
Determine the equation of the least squares line giving the coefficients correct to a required number of decimal places or significant figures as specified, and distinguish between correlation and causation			
Use the least squares line of best fit to model and analyse the linear association between two numerical variables and interpret the model in the context of the association being modelled			

Calculate the coefficient of determination, r^2 , and interpret in the context of the association being modelled and use the model to make predictions, being aware of the problem of extrapolation			
Construct a residual analysis to test the assumption of linearity and, in the case of clear non-linearity, transform the data to achieve linearity and repeat the modelling process using the transformed data			
Identify key qualitative features of a time series plot including trend (using smoothing if necessary), seasonality, irregular fluctuations and outliers, and interpret these in the context of the data			
Calculate, interpret and apply seasonal indices			
Model linear trends using the least squares line of best fit, interpret the model in the context of the trend being modelled, use the model to make forecasts with consideration of the limitations of extending forecasts too far into the future			
Topic: Recursion and Financial Modelling	**Do I have it in my notes?**	**Note-making deadline**	**Memorising deadline**
Model and analyse growth and decay in financial contexts using a first-order linear recurrence relation of the form: where a, R and d are constants			
Demonstrate the use of a recurrence relation to determine the depreciating value of an asset or the future value of an investment or a loan after n time periods for the initial sequence			
Use a rule for the future value of a compound interest investment or loan, or a depreciating asset, to solve practical problems			
Use a table to investigate and analyse on a step–by-step basis the amortisation of a reducing balance loan or an annuity, and interpret amortisation tables			
Use technology with financial mathematics capabilities, to solve practical problems associated with compound interest investments and loans, reducing balance loans, annuities and perpetuities, and annuity investments			
Topic: Matrices	**Do I have it in my notes?**	**Note-making deadline**	**Memorising deadline**
Use matrix recurrence relations to generate a sequence of state matrices, including an informal identification of the equilibrium or steady state matrix in the case of regular state matrices			
Construct a transition matrix from a transition diagram or a written description and vice versa			
Construct a transition matrix to model the transitions in a population with an equilibrium state			
Use matrix recurrence relations to model populations with culling and restocking			

Topic: Networks and Decision Mathematics	Do I have it in my notes?	Note-making deadline	Memorising deadline
Construct graphs, digraphs and networks and their matrix equivalents to model and analyse practical situations			
Recognise the exploring and travelling problem and to solve it by utilising the concepts of walks, trails, paths, Eulerian trails and circuits, and Hamiltonian paths and cycles			
Recognise the minimum connector problem and solve it by utilising the properties of trees, spanning trees and by determining a minimum spanning tree by inspection or using Prim's algorithm for larger scale problems			
Recognise the flow problem, use networks to model flow problems and determine the minimum flow problem by inspection, or by using the minimum cut/maximum flow theorem for larger scale problems			
Recognise the shortest path problem and solve it by inspection or using Dijkstra's algorithm for larger scale problems			
Recognise the matching problem and solve it by inspection or using the Hungarian algorithm for larger scale problems			
Recognise the scheduling problem and solve it by using critical path analysis			

Practice Schedule

PRACTICE EXAM	DEADLINE
Practice Exam 1	
Practice Exam 2	
Practice Exam 3	
Practice Exam 4	
Practice Exam 5	
EXAM DATE:	

Congratulations!

You're ready! Now relax and think about how good it will feel leaving the exam room knowing the hard work has paid off. Congratulations and good luck (not that you need it)!

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