4021 mathematics past papers syllabus a answers

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4021 Mathematics Past Papers: Syllabus A and Answers

The 4021 Mathematics syllabus A exam is a challenging assessment that requires students to master a wide range of mathematical concepts. To prepare for this exam, it is essential to practice solving past papers, which provide valuable insights into the types of questions that may be asked.

Section A: Pure Mathematics

- Question: Find the gradient of the normal to the curve $y = x^2 + 2x$ at the point (1, 3).
- Answer: -1
- Question: Solve the equation: |x 2| = 3
- **Answer:** x = -1, x = 5

Section B: Statistics

• Question: A random sample of 100 students is taken from a population with a mean height of 170 cm and a standard deviation of 10 cm. Find the probability that the sample mean height is less than 168 cm.

• **Answer**: 0.1587

• Question: The following data represents the number of goals scored by a

football team in 10 matches: 2, 3, 1, 4, 2, 3, 4, 1, 3, 2. Calculate the median

and mean of the data.

• Answer: Median = 2, Mean = 2.4

Section C: Mechanics

• Question: A particle of mass 2 kg is projected vertically upwards with a

velocity of 10 m/s. Find the maximum height reached by the particle.

• **Answer:** 10.2 m

• Question: A car of mass 1000 kg moves along a straight road with an

acceleration of 2 m/s^2. Find the force acting on the car.

• Answer: 2000 N

Section D: Probability

• Question: Two dice are rolled together. Find the probability of getting a sum

of 7.

• **Answer**: 1/6

• Question: A bag contains 5 red balls, 3 blue balls, and 2 green balls. Two

balls are drawn randomly from the bag without replacement. Find the

probability of drawing a red ball and then a green ball.

Answer: 1/15

By thoroughly working through these past papers, students can gain a deeper understanding of the syllabus requirements, identify areas where they need improvement, and develop strategies for answering different types of questions. The included answers provide guidance and help students check their progress.

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