

## The Ruff Guide to GCSE Mathematics (E-B)

### CONTENTS OF THE RUFF GUIDE (Y10&Y11)

- Topic 1: Number Techniques
- Topic 2: Patterns and Sequences
- Topic 3: Algebra is Easy When You Know the Rules
- Topic 4: Measurement and Construction
- Topic 5: Fractions, Decimals and Percentages
- Topic 6: Coordinates, Shapes and Transformations
- Topic 7: Essential Statistics
- Topic 8: Further Number Techniques These are in both texts,
- Topic 9: How Likely Is It ? to provide flexibility.
- Topic 10: Transformations, Areas and Volumes
- Topic 11: Pythagoras and Trigonometry
- Topic 12: Advanced Algebra
- Topic 13: Further Geometric Techniques
- Topic 14: Functions and Graphs

The emphasis here is on non-calculator skills, with a particular stress on mental agility. Many of the sections within the topics open with items that can be used as mental/oral starters and the techniques taught/reviewed here should be repeated regularly over the weeks following their introduction

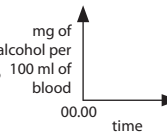
The course should start with Topic 1. This contains the number techniques that will be assumed thereafter throughout the course. The rest of the topics are independent and can be done in any order. Any techniques required within a topic that are taught elsewhere, will be repeated at the point where they are required.

### SAMPLE from Topic 14 "Functions and Graphs"

#### E7.3: \*\*When are you legally fit to drive ?

Dan and Dave go to a party. At midnight, Dan decides that he has had enough to drink. He stops drinking with a blood alcohol level of 200 mg. Dave drinks more slowly. When he stops drinking at 2 am, he has a blood alcohol level of 140 mg. The legal driving limit of blood alcohol level is 80 mg per 100 ml. The blood alcohol level decreases naturally by about 15 mg per hour.

1. Draw two lines on a graph like this, showing the blood alcohol levels of both Dave and Dan, until it reaches zero in each case.
2. At what time should Dave be legally capable of driving home ?
3. Dan drives to work next morning at 7 am. Is he legally fit to drive ? Explain why or why not.
4. When should Dan and Dave each be back to zero alcohol level ? (two answers)



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#### Optional Teachers' COPYMASTER Resource & Assessment Packs for Ruff

The wirebound packs contain:

- Teachers' Guide
- Worksheet masters
- End of topic Revision Sheets
- End of topic Assessments
- Revision and Assessment Answers

Y10 Ruff (wirebound): £30

Y11 Ruff (wirebound): £30