

Name

Class



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# Midpoints

(9 – 1) Topic booklet

## Higher

These questions have been collated from previous years GCSE Mathematics papers.

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  - *there may be more space than you need.*
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out**.
- If the question is a **1H** question you are not allowed to use a calculator.
- If the question is a **2H** or a **3H** question, you may use a calculator to help you answer.

### Information

- The marks for **each** question are shown in brackets
  - *use this as a guide as to how much time to spend on each question.*

### Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

**Answer ALL questions**  
**Write your answers in the space provided.**  
**You must write down all the stages in your working.**



12  $A$  is the point with coordinates  $(7, 13)$   
 $B$  is the point with coordinates  $(-3, 21)$   
 $C$  is the point with coordinates  $(15, 23)$

$M$  is the midpoint of  $AB$ .

$N$  is the midpoint of  $BC$ .

Work out the distance between  $M$  and  $N$ .

Give your answer correct to 1 decimal place.