

Please write clearly in block capitals.

Centre number

--	--	--	--	--

Candidate number

--	--	--	--

Surname

---

Forename(s)

---

Candidate signature

---

# GCSE METHODS IN MATHEMATICS (LINKED PAIR)

# H

Higher Tier Unit 1 Algebra and Probability (Section B)

Thursday 26 May 2016

Morning

Time allowed: 45 minutes

## Materials

For this paper you must have:

- mathematical instruments.
- You must **not** use a calculator.



## Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.
- You must **not** use your calculator in Section B. Your calculator must remain on the floor under your seat.
- When you have answered Section B you may work again on Section A but you must **not** use your calculator. It must remain on the floor under your seat.
- At the end of the examination tag Section A and Section B together with Section A on top.

## Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 40.
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

## Advice

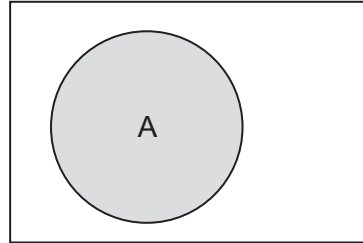
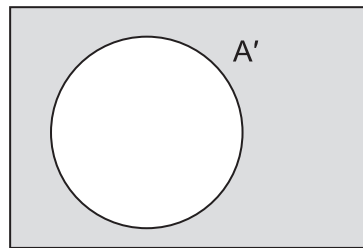
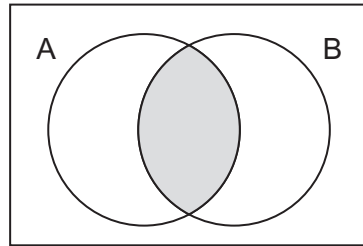
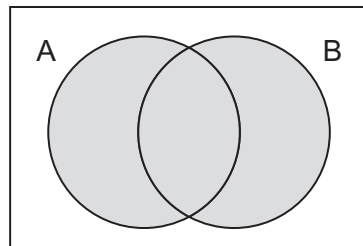
- In all calculations, show clearly how you work out your answer.



## Formulae Sheet: Higher Tier

## Set notation

A

 $A'$  $A \cap B$  $A \cup B$ 

Answer **all** questions in the spaces provided.

**12** Work out 60 as a percentage of 400

**[2 marks]**

---

---

---

---

Answer \_\_\_\_\_ %

**13** 300 is divided into two parts in the ratio 1 : 5  
Work out the **larger** part.

**[2 marks]**

---

---

---

Answer \_\_\_\_\_

**Turn over for the next question**



14 (a) Work out  $\frac{8}{11} - \frac{1}{2}$

[2 marks]

---

---

---

---

---

Answer \_\_\_\_\_

14 (b) Work out half of  $3\frac{1}{8}$

Give your answer as a mixed number.

[3 marks]

---

---

---

---

---

---

---

Answer \_\_\_\_\_



15 50 students were asked if they use Facebook (F) and Snapchat (S).

30 of the students use Snapchat.

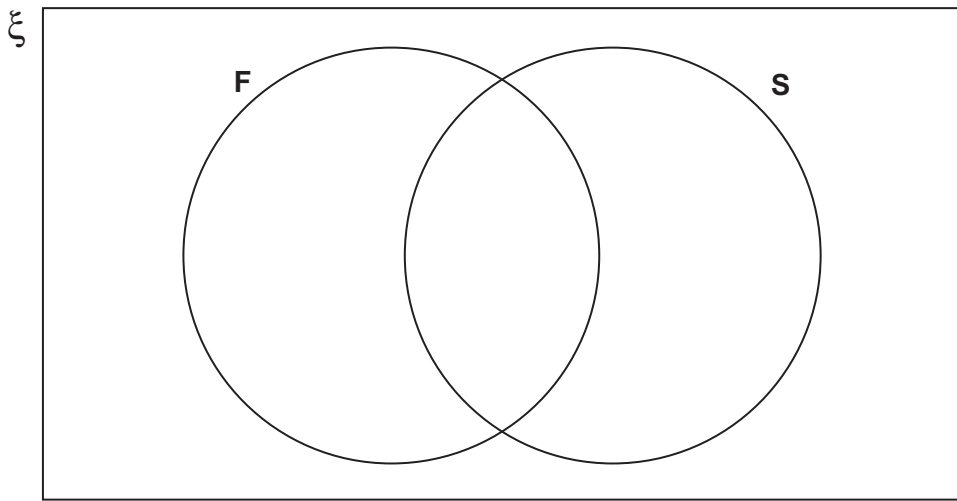
$\frac{4}{5}$  of the students who use Snapchat also use Facebook.

23 of the students use either Facebook or Snapchat, but not both.

One of the 50 students is chosen at random.

Work out the probability that the student does **not** use Facebook or Snapchat.  
You may use the Venn diagram but do not have to.

[4 marks]




---



---



---



---

Answer \_\_\_\_\_



16 Simplify  $6x^3 \times 9x^5$

[2 marks]

---

Answer \_\_\_\_\_

17 Rearrange  $4(x + y) = 6y - 7$  to make  $x$  the subject.

Give your answer in its simplest form.

[3 marks]

---

---

---

---

---

---

Answer \_\_\_\_\_



18 Work out  $(1.3 \times 10^3) \div (2.6 \times 10^{-4})$

Give your answer in standard form.

[3 marks]

---

---

---

---

---

---

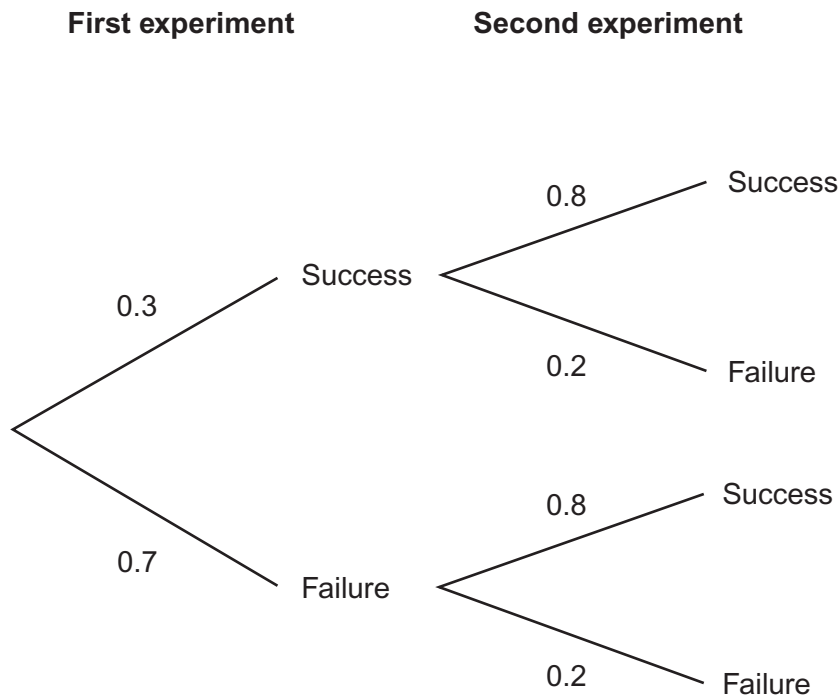
---

Answer \_\_\_\_\_

Turn over for the next question



- 19 The tree diagram shows the probabilities of success and failure in two independent experiments.



Work out the probability of success in **exactly one** experiment.

**[3 marks]**

---

---

---

---

---

---

---

Answer \_\_\_\_\_







21 The length of a line joining points  $(a, b)$  and  $(c, d)$  is given by

$$\sqrt{(c - a)^2 + (d - b)^2}$$

Work out the length of the line joining  $(-2, 1)$  and  $(6, -3)$

Give your answer in the form  $a\sqrt{b}$ , where  $a$  and  $b$  are integers greater than 1

**[3 marks]**

---

---

---

---

---

---

---

Answer \_\_\_\_\_





23 Explain why, when  $x$  is a **negative** number,

$x^2 - 7x + 12$  always has a **positive** value.

[2 marks]

---

---

---

---

---

---

---

---

---

---





**There are no questions printed on this page**

**DO NOT WRITE ON THIS PAGE  
ANSWER IN THE SPACES PROVIDED**



**There are no questions printed on this page**

**DO NOT WRITE ON THIS PAGE  
ANSWER IN THE SPACES PROVIDED**



**There are no questions printed on this page**

**DO NOT WRITE ON THIS PAGE  
ANSWER IN THE SPACES PROVIDED**

**Copyright Information**

For confidentiality purposes, from the November 2015 examination series, acknowledgements of third party copyright material will be published in a separate booklet rather than including them on the examination paper or support materials. This booklet is published after each examination series and is available for free download from [www.aqa.org.uk](http://www.aqa.org.uk) after the live examination series.

Permission to reproduce all copyright material has been applied for. In some cases, efforts to contact copyright-holders may have been unsuccessful and AQA will be happy to rectify any omissions of acknowledgements. If you have any queries please contact the Copyright Team, AQA, Stag Hill House, Guildford, GU2 7XJ.

Copyright © 2016 AQA and its licensors. All rights reserved.

