

**Paper Reference 1MA1/3F**  
**Pearson Edexcel**  
**Level 1/Level 2 GCSE (9–1)**

<b>Total Marks</b>
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**Mathematics**  
**Paper 3**  
**(Calculator)**  
**Foundation Tier**

**Monday 8 June 2020 – Morning**

**Time: 1 hour 30 minutes plus your additional time allowance.**

**In the boxes below, write your name, centre number and candidate number.**

<b>Surname</b>					
<b>Other names</b>					
<b>Centre Number</b>					
<b>Candidate Number</b>					

**YOU MUST HAVE**

**Ruler, protractor, compasses, writing and drawing equipment, calculator. Tracing paper may be used.**

**YOU WILL BE GIVEN**

**Diagram Book**

# **INSTRUCTIONS**

**Answer ALL questions.**

**Answer the questions in the spaces provided in this Question Paper or on the separate diagrams – there may be more space than you need.**

**You must SHOW ALL YOUR WORKING.**

**Diagrams are NOT accurately drawn, unless otherwise indicated.**

**CALCULATORS MAY BE USED.**

**If your calculator does not have a  $\pi$  button, take the value of  $\pi$  to be  $3.142$  unless the question instructs otherwise.**

**Turn over**

## **INFORMATION**

**The total mark for this paper is 80**

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

**You may be provided with models for Question 22 and Question 29  
They are NOT accurate.**

**There may be spare copies of some diagrams.**

**Turn over**

**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.**

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**Answer ALL questions.**

**Write your answers in the spaces provided.**

**You must write down all the stages in your working.**

**1. Change 300 centimetres into metres.**

\_\_\_\_\_ metres

**(Total for Question 1 is 1 mark)**

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**2. Work out**

$$\frac{1}{3} \text{ of } 24$$

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**(Total for Question 2 is 1 mark)**

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**Turn over**



**3. Write**  
**40% as a fraction.**

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**(Total for Question 3 is 1 mark)**

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**Turn over**

**4. Work out**

$$2 \cdot 5^2$$

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**(Total for Question 4 is 1 mark)**

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**Turn over**

**5. Write the following seven numbers in order of size.**

**Start with the smallest number.**

**1    -4    0    7    -6    -3    2**

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**(Total for Question 5 is 1 mark)**

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**6. Look at the diagram for Question 6 in the Diagram Book.**

**It is a graph which shows some information about car production in the UK over eight years.**

- (a) For how many of these years was car production more than 1.4 million?**
- (1 mark)**
- 

**(continued on the next page)**

**Turn over**

**6. continued.**

**(b) In which two years was car  
production the same?**

**(1 mark)**

\_\_\_\_\_ , \_\_\_\_\_

**(Total for Question 6 is 2 marks)**

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**Turn over**

**7. Look at the diagram for Question 7 in the Diagram Book.**

**It shows a shape.**

**What fraction of the shape is shaded?**

**Give your answer in its simplest form.**

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**(Total for Question 7 is 2 marks)**

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**Turn over**

**8. Karim buys 200 tiles.**

**The tiles are sold in boxes.**

**There are 25 tiles in each box.**

**Each box of tiles costs £9·75**

**Work out the total cost of the boxes  
of tiles Karim buys.**

**(3 marks)**

**Answer space continues on the next  
page.**

**8. continued.**

£ \_\_\_\_\_

**(Total for Question 8 is 3 marks)**

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**Turn over**



9. (a) Work out the value of

$$\frac{300}{2 \times 5}$$

(1 mark)

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(continued on the next page)

**9. continued.**

**(b) Work out the value of**

$$(6 - 2 \cdot 5)(8 + 4)$$

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**9. continued.**

**(c) Write down the reciprocal of 20**  
**(1 mark)**

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**(Total for Question 9 is 3 marks)**

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**Turn over**

**10. Look at the diagram for Question 10 in the Diagram Book.**

**It is a graph which shows information about the time, in minutes, a liquid has been cooling and the temperature of the liquid in  $^{\circ}\text{C}$**

- (a) What is the temperature of the liquid at time 2 minutes?  
(1 mark)**

**\_\_\_\_\_  $^{\circ}\text{C}$**

**(continued on the next page)**

**10. continued.**

**Pam recorded the time when the  
liquid had a temperature of  $50^{\circ}\text{C}$**

**(b) Write down this time.**

**(1 mark)**

**\_\_\_\_\_ minutes**

**(continued on the next page)**

**Turn over**

**10. continued.**

**Pam says that the temperature of the liquid drops more in the first 3 minutes of cooling than it does between time 9 minutes and time 12 minutes.**

**(c) Is Pam correct?**

**Give a reason for your answer.**

**(1 mark)**

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**(Total for Question 10 is 3 marks)**

**Turn over**

**11. Look at the diagram for Question 11 in the Diagram Book.**

**PQRS is a quadrilateral.**

**PST is a straight line.**

**Angle PQR =  $130^\circ$**

**Angle QRS =  $65^\circ$**

**Angle SPQ =  $95^\circ$**

**Angle RST =  $y^\circ$**

**Find the value of  $y$**

**(3 marks)**

**Answer space continues on the next page.**

**11. continued.**

**$y =$  \_\_\_\_\_**

**(Total for Question 11 is 3 marks)**

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**Turn over**



**12. Here are the first five terms of a number sequence.**

**45          40          35          30          25**

**(a) (i) Write down the next two terms of this sequence.**

**(1 mark)**

\_\_\_\_\_ , \_\_\_\_\_

**(continued on the next page)**

**Turn over**

**12. (a) continued.**

**Remember:**

**Here are the first five terms of a  
number sequence.**

**45      40      35      30      25**

**A term of this sequence is  $-5$**

**(ii) Which term?**

**(1 mark)**

**Answer space continues on  
the next page.**

**Turn over**

**12. (a) (ii) continued.**

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**(continued on the next page)**

**12. continued.**

**The  $n$ th term of a different sequence  
is given by the expression**

$$4n + 3$$

**(b) Find the 9th term of this  
sequence.**

**(1 mark)**

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**(Total for Question 12 is 3 marks)**

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**Turn over**

**13. Look at the diagram for Question 13 in the Diagram Book.**

**It shows a shape.**

**Four sides of the shape are labelled  
4 cm, 5 cm, 10 cm and 7 cm**

**All five marked angles are  
right angles.**

**Work out the perimeter of this shape.  
(2 marks)**

**Answer space continues on the next  
page.**

**13. continued.**

\_\_\_\_\_ **cm**

**(Total for Question 13 is 2 marks)**

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**Turn over**

**14. (a) Simplify**

$$3w + 5y + 2w - 4y$$

**(2 marks)**

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**(continued on the next page)**

**Turn over**

**14. continued.**

**(b) Solve**

$$5p + 7 = 22$$

**(2 marks)**

**p = \_\_\_\_\_**

**(Total for Question 14 is 4 marks)**

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**Turn over**



**15. Look at the information for  
Question 15 in the Diagram Book.  
It shows the costs of the same type  
of batteries in two shops.**

**Harry needs to buy at least  
30 batteries.**

**He assumes that he has to buy  
batteries in whole packs.**

**Harry wants to buy the batteries as  
cheaply as possible from the same  
shop.**

**(continued on the next page)**

**Turn over**

**15. continued.**

- (a) Which shop should he buy the batteries from, shop **A** or shop **B**?**

**You must show all your working.**

**(4 marks)**

**Answer space continues on the next page.**

**15. (a) continued.**

**(continued on the next page)**

**Turn over**

**15. continued.**

**Harry's assumption is wrong.**

**He can buy single batteries for  
40 pence each in shop A and for  
45 pence each in shop B**

**(b) Does this affect which of these  
two shops Harry should buy the  
batteries from?**

**Give a reason for your answer.**

**(1 mark)**

**Answer lines continue on the  
next page.**

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**Turn over**

**15. (b) continued.**

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**(Total for Question 15 is 5 marks)**

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- 16. There are only 5 blue cards, 2 green cards and 4 red cards in a pack.**

**Isabella is going to take at random one card from the pack.**

- (a) Write down the probability that Isabella will take a blue card.  
(2 marks)**

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**(continued on the next page)**

**Turn over**

**16. continued.**

**Ken is going to throw a biased dice once.**

**The probability that the dice will land on six is  $0.3$**

**(b) What is the probability that the dice will NOT land on six?**

**(1 mark)**

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**(Total for Question 16 is 3 marks)**

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**Turn over**

**17. Look at the diagram for Question 17 in the Diagram Book.**

**Draw accurately an isosceles triangle with sides of length 8 cm, 6 cm and 6 cm**

**One side of the triangle has been drawn for you in the Diagram Book.**

**(Total for Question 17 is 2 marks)**

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**18. Look at the diagram for Question 18 in the Diagram Book.**

**It shows a graph that can be used to change between US dollars (\$) and British pounds (£)**

**Rosie bought a ring in the USA.  
She paid 345 US dollars.**

**Work out in pounds the amount Rosie paid for the ring.**

**(3 marks)**

**Answer space continues on the next page.**

**18. continued.**

£ \_\_\_\_\_

**(Total for Question 18 is 3 marks)**

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**Turn over**

**19. Look at the information for Question 19 in the Diagram Book. It shows the four types of sandwiches sold in a cafe last week.**

**56 tuna sandwiches were sold.**

**This was 40% of the total number of sandwiches sold.**

**(a) Work out the total number of sandwiches sold.**

**(2 marks)**

**Answer space continues on the next page.**

**19. (a) continued.**

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**(continued on the next page)**

**Turn over**

**19. continued.**

**Of the 56 tuna sandwiches sold,  
18 were sold on Friday.**

**(b) Write 18 as a percentage of 56  
Give your answer correct to the  
nearest whole number.**

**(2 marks)**

**Answer space continues on the  
next page.**

**19. (b) continued.**

\_\_\_\_\_ %

**(Total for Question 19 is 4 marks)**

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**Turn over**

**20. Akhtar, Ben and Carl each have some money.**

**Akhtar has £65**

**Ben has £100**

**Carl has three £5 notes,  
one £20 note and some £10 notes.**

**The mean amount of money per  
person is £80**

**How many £10 notes does Carl  
have?**

**(4 marks)**

**Answer space is on the next  
two pages.**

**Turn over**

**20. continued.**

**Turn over**



**20. continued.**

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**(Total for Question 20 is 4 marks)**

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**Turn over**

**50**

**21. Malik is going to throw a fair coin  
50 times.**

**(a) Write down an estimate for the  
number of times the coin will  
land on heads.**

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**21. continued.**

**Paula and Simon are trying to find out if a different coin is biased.**

**Paula throws this coin 10 times.**

**She records the number of times the coin lands on heads.**

**Simon throws the same coin 100 times.**

**He records the number of times the coin lands on heads.**

**(continued on the next page)**

**Turn over**

**21. continued.**

**(b) Whose results will be more useful in deciding if the coin is biased?**

**Give a reason for your answer.**

**(1 mark)**

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**(Total for Question 21 is 2 marks)**

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**Turn over**

**22. Look at the diagrams for Question 22 in the Diagram Book.**

**You may be provided with a model.**

**Diagram 1 and the model show a solid made from a square-based pyramid and a cube.**

**Each edge of the solid has length 6 cm**

**Diagram 2 shows four shapes labelled A, B, C and D on a grid.**

**One square length on the grid represents 1 cm on the solid.**

**(continued on the next page)**

**Turn over**

**22. continued.**

**Which shape *A*, *B*, *C* or *D* represents  
the plan of the solid?**

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**(Total for Question 22 is 2 marks)**

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**Turn over**

**23. (a) Simplify**

$$n^3 \times n^5$$

**(1 mark)**

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**(continued on the next page)**

**Turn over**

**23. continued.**

**(b) Simplify**

$$\frac{p^3 q^4}{p^2 q}$$

**(2 marks)**

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**(continued on the next page)**

**Turn over**



**23. continued.**

**(c) Solve**

$$\frac{5x}{2} > 7$$

**(2 marks)**

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**(Total for Question 23 is 5 marks)**

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**Turn over**

- 24. Andy cycles a distance of 30 km at an average speed of 24 km/h**  
**He then runs a distance of 12 km at an average speed of 8 km/h**

**Work out the total time Andy takes.**

**Give your answer in hours and minutes.**

**(3 marks)**

**Answer space continues on the next two pages.**

**24. continued.**

**Turn over**

**24. continued.**

\_\_\_\_\_ hours \_\_\_\_\_ minutes

**(Total for Question 24 is 3 marks)**

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**Turn over**

**25. A number,  $m$ , is rounded to  
1 decimal place.**

**The result is  $9.4$**

**Complete the error interval for  $m$**

**\_\_\_\_\_  $\leq m <$  \_\_\_\_\_**

**(Total for Question 25 is 2 marks)**

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- 26. Maisie knows that she needs 3 kg of grass seed to make a rectangular lawn 5 metres by 9 metres.**

**Grass seed is sold in 2 kg boxes.**

**Maisie wants to make a rectangular lawn 10 metres by 14 metres.**

**She has 5 boxes of grass seed.**

- (a) Has Maisie got enough grass seed to make a lawn 10 metres by 14 metres?**

**You must show all your working.**

**(4 marks)**

**Answer space is on the next two pages.**

**Turn over**

**26. (a) continued.**

**Turn over**

**26. (a) continued.**

**(continued on the next page)**

**Turn over**



**26. continued.**

**Maisie opens the 5 boxes of grass seed.**

**She finds that 4 of the boxes contain 2 kg of grass seed.**

**The other box contains 1 kg of grass seed.**

**(continued on the next page)**

**Turn over**

**26. continued.**

**(b) Does this affect whether Maisie has enough grass seed to make her lawn?**

**Give a reason for your answer.**

**(1 mark)**

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**(Total for Question 26 is 5 marks)**

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**Turn over**

**27. Look at the diagrams for Question 27 in the Diagram Book.**

**They show two spinners, labelled **A** and **B** and a probability tree diagram.**

**Amanda has two fair 3-sided spinners.**

**Amanda spins each spinner once.**

**(a) Complete the probability tree diagram in the Diagram Book.**  
**There are six spaces to fill.**

**(2 marks)**

**(continued on the next page)**

**Turn over**

**27. continued.**

- (b) Work out the probability that  
Spinner A lands on 2 and  
Spinner B does NOT land on 2  
(2 marks)**

**Answer space continues on the  
next page.**

**27. (b) continued.**

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**(Total for Question 27 is 4 marks)**

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**28. Look at the diagram for  
Question 28(a) in the Diagram Book.  
It shows the graphs of  
 $5x - 9y = -46$  and  
 $y = -2x$**

**(a) Use these graphs to solve the  
simultaneous equations**

$$5x - 9y = -46$$
$$y = -2x$$

**(1 mark)**

**Answer space is on the next  
page.**

**28. (a) continued.**

**x =** \_\_\_\_\_

**y =** \_\_\_\_\_

**(continued on the next page)**

**Turn over**

**28. continued.**

**(b) Look at the diagram for  
Question 28(b) in the  
Diagram Book.**

**It shows the graph of  
 $y = x^2 - 4x + 2$**

**Use this graph to find estimates  
for the solutions of the quadratic  
equation  $x^2 - 4x + 2 = 0$   
(2 marks)**

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**(Total for Question 28 is 3 marks)**

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**Turn over**



**29. Look at Diagram 1 and Diagram 2 for Question 29 in the Diagram Book. You may be provided with a model. Diagram 1 and the model show a solid triangular prism.**

**Diagram 2 shows one of the triangular faces.**

**The prism is made from wood with a density of  $0.8 \text{ g/cm}^3$**

**Work out the mass of this prism.**

**(3 marks)**

**Answer space continues on the next two pages.**

**29. continued.**

**Turn over**

**29. continued.**

\_\_\_\_\_ grams

**(Total for Question 29 is 3 marks)**

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**Turn over**

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**TOTAL FOR PAPER IS 80 MARKS**

**END OF PAPER**

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