## AQA

Teacher

| Please write clearly in block capitals.  |                     |
|--|---------------------|
| Centre number Candidate num  | ber                 |
| Surname  |                     |
| Forename(s)  |                     |
| Candidate signature  |                     |
| GCSE   |                     |
| Mathematics  |                     |
| Mathematics  | 32                  |
| Foundation Paper 2 Calculator  | o e<br>prosist      |
| Summer 2019 Time allowed   | : 1 hour 30 minutes |
| Materials  | For Examiner's Use  |
| For this paper you must have:  | Pages Mark          |
| mathematical instruments.  | 3                   |
|  | 4 - 5               |
| Instructions   | 6 – 7               |
| <ul> <li>Use black ink or black ball-point pen. Draw diagrams in pencil.</li> <li>Answer all questions</li> </ul>                                  | 8-9                 |
| <ul> <li>You must answer the questions in the spaces provided. Do not write</li> </ul>   | te <u>10 – 11</u>   |
| <ul> <li>outside the box around each page or on blank pages.</li> <li>Do all rough work in this book. Cross through any work you do not</li> </ul> | 12 – 13             |
| want to be marked.   | 14 – 15             |
| Information  | 16 - 17             |
| <ul> <li>The marks for questions are shown in brackets.</li> </ul>   | 18 - 19             |
| <ul> <li>The maximum mark for this paper is 80.</li> <li>You may ask for more answer paper, graph paper and tracing paper</li> </ul>               | 20 - 21             |
| These must be tagged securely to the answer book.  | 24 - 25             |
| Advice   | 26 - 27             |
| <ul> <li>In all calculations, show clearly how you work out your answer.</li> </ul>  | TOTAL               |

## 8300/MissB/2F

Class

## **Practice Paper Overview**

| Q  | Торіс                        |       | Mark | Total |
|----|------------------------------|-------|------|-------|
| 1  | Negative Numbers             |       |      | 1     |
| 2  | Algebraic Expressions        |       |      | 1     |
| 3  | Units of Measure             |       |      | 1     |
| 4  | Rotational Symmetry          |       |      | 1     |
| 5  | Using a Calculator           |       |      | 2     |
| 6  | Pictogram                    |       |      | 2     |
| 7  | Function Machines            |       |      | 3     |
| 8  | Number Problem               |       |      | 3     |
| 9  | Nets, Plans and Elevations   |       |      | 2     |
| 10 | Sequences                    |       |      | 3     |
| 11 | Percentage and Money Problem |       |      | 5     |
| 12 | Ratio Problem                |       |      | 3     |
| 13 | Parts of a circle            |       |      | 1     |
| 14 | Percentage Problem           |       |      | 4     |
| 15 | Simplify and Solve           |       |      | 4     |
| 16 | Speed Distance Time          |       |      | 2     |
| 17 | Pie Chart Problem            |       |      | 4     |
| 18 | Right Angled Trigonometry    |       |      | 2     |
| 19 | Product of Prime Factors     |       |      | 3     |
| 20 | Frequency Tree               |       |      |       |
| 21 | Form and Solve Equations     |       |      | 5     |
| 22 | Inequalities                 |       |      | 1     |
| 23 | Parallel Lines               |       |      | 1     |
| 24 | Combinations                 |       |      | 2     |
| 25 | Error Interval               |       |      | 2     |
| 26 | Mean from a table            |       |      | 4     |
| 27 | Direct Proportion            |       |      | 3     |
| 28 | Angles in Polygons           |       |      | 2     |
| 29 | Probability Problem          |       |      | 5     |
| 30 | Compound Interest            |       |      | 5     |
|    |                              | Total |      | 80    |

|   |   |                | 3               |                        |                |          |   |
|---|---|----------------|-----------------|------------------------|----------------|----------|---|
|   | Answer <b>all</b> questions in the spaces provided. |                |                 |                        |                |          |   |
| 1 | Circle the lowest of these temperatures. [1 mark]   |                |                 |                        |                |          |   |
|   | -2.6°C  | 6.2° <i>C</i>  | -6° <i>C</i>    | 0° <i>C</i>            | 0.3° <i>C</i>  |          |   |
|   |   |                |                 |                        |                |          |   |
| 2 | Circle the expr                                     | ession that is | s five times sn | naller than <i>n</i> . |                | [1 mark] |   |
|   | n-5   | 5n             | <i>n</i> + 5    | $\frac{n}{5}$          | $n^5$          |          |   |
|   |   |                |                 |                        |                |          |   |
| 3 | Which unit is n                                     | nost suitable  | for measuring   | g the length of        | a football pit | tch?     |   |
|   | Circle your ans                                     | swer.          |                 |                        |                | [1 mark] |   |
|   | millimetre  | es centi       | metres          | metres                 | kilometre      | S        |   |
|   |   |                |                 |                        |                |          |   |
|   |   |                |                 |                        |                |          |   |
|   |   | www.m          | nissbsresourc   | es.com                 |                |          | 3 |

|   | 4  |                                    |
|---|--|------------------------------------|
| 4 | Circle the order of rotational symmetry of this drawing. | Do not write<br>outside the<br>box |
|   | [1 mark]   |                                    |
|   | 0 1 2 3 4  |                                    |
| 5 | Work out the value of $\sqrt{5678} - 2^7$ [2 marks]      |                                    |
|   | Answer   |                                    |
|   |  |                                    |
|   |  |                                    |
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|       |                                  | 5  |          | -                                  |
|-------|----------------------------------|--|----------|------------------------------------|
| 6     | The pictogram<br>Thursday, Frida | shows the number of bags sold by a shop on<br>ay and Saturday of one week. |          | Do not write<br>outside the<br>box |
|       |                                  | Key: represents people   | 9        |                                    |
|       | Thursday                         |  |          |                                    |
|       | Friday                           |  |          |                                    |
|       | Saturday                         |  |          |                                    |
|       | 12 people buy                    | a bag on Thursday.   | -        |                                    |
| 6 (a) | Complete the                     | key.   | [1 mark] |                                    |
| C (h) |                                  |  |          |                                    |
| (d) ð | How many pe                      | ople buy a bag on Saturday.  | [1 mark] |                                    |
|       |                                  |  |          |                                    |
|       | ,                                | Answer   |          |                                    |
|       |                                  |  |          |                                    |
|       |                                  | www.missbsresources.com  |          | 2                                  |

| 6   |                                |
|---|--------------------------------|
| 7 Here is a number machine.                             | Do not wr<br>outside ti<br>box |
| $x \rightarrow x 4 \rightarrow -9 \rightarrow y$        | )                              |
| <b>7 (a)</b> Work out the output when the input is 7    | [1 mark]                       |
|   |                                |
| Answer  |                                |
| 7 (b) Work out the input when the output is 3           | [1 mark]                       |
|   |                                |
| Answer  |                                |
| <b>7 (c)</b> Work out the output when the input is $2x$ | [1 mark]                       |
|   |                                |
| Answer  |                                |
| AIISWEI   |                                |
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| 8 | In this magic squar   | e each row | r, column a | nd diagona | al sum to make 21. | Do not write<br>outside the<br>box |
|---|-----------------------|------------|-------------|------------|--------------------|------------------------------------|
|   |                       | 6          |             | 10         |                    |                                    |
|   |                       | 11         |             |            |                    |                                    |
|   |                       |            | 9           |            |                    |                                    |
|   | Fill in the missing n | umbers.    |             |            | [3 ו               | marks]                             |
|   |                       |            |             |            |                    | _                                  |
|   |                       |            |             |            |                    | _                                  |
|   |                       |            |             |            |                    | _                                  |
|   |                       |            |             |            |                    | _                                  |
|   |                       |            |             |            |                    | _                                  |
|   |                       |            |             |            |                    | _                                  |
|   |                       |            |             |            |                    |                                    |
|   |                       | www.mi     | ssbsresou   | rces.com   |                    | 3                                  |

Practice Paper 1



2

box

| 9   |                                    |
|---|------------------------------------|
| <b>10</b> The diagram shows a sequence of patterns.         | Do not write<br>outside the<br>box |
|   |                                    |
| Pattern 1 Pattern 2 Pattern 3 Patte                         | rn 4                               |
| <b>10 (a)</b> Work out the number of triangles in pattern 7 | [1 mark]                           |
|   |                                    |
| Answer  |                                    |
| <b>10 (b)</b> Complete the rule below.                      | [1 mark]                           |
| Number of triangles = Pattern number $\times$ +             |                                    |
| <b>10 (c)</b> Which pattern number has 35 triangles         | [1 mark]                           |
|   |                                    |
|   |                                    |
| Answer  |                                    |
|   |                                    |
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| 11 | Liam works Tuesday, Wednesday and Thursday                      | Do not write<br>outside the |
|----|---|-----------------------------|
| •• | Liam works ruesday, wednesday and mursday.                      | DOX                         |
|    | He starts work at 5.00 pm and finishes at 9.30 pm.              |                             |
|    | Liam is paid £4.35 an hour on week days.                        |                             |
|    | One week he also works for 5 hours on both Saturday and Sunday. |                             |
|    | He is paid 20% more on a weekend.                               |                             |
|    | How much does Liam earn altogether this week?                   |                             |
|    | [5 marks]   |                             |
|    |   |                             |
|    |   |                             |
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|    | Answer  |                             |
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|    |   |                             |
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|    | www.missosresources.com   | 3                           |

| 12   | The angles in a triangle are in the ratio 2:3:4. |             | Do not write<br>outside the<br>box |
|------|--|-------------|------------------------------------|
|      | Lewis says                                       |             |                                    |
|      | "This is a right-angled triangle".               |             |                                    |
|      | Is Lewis correct?                                |             |                                    |
|      | Yes No   |             |                                    |
|      | Show your reasoning.                             | [3 marks]   |                                    |
|      |  |             |                                    |
|      |  |             |                                    |
|      |  |             |                                    |
|      |  |             |                                    |
|      |  |             |                                    |
|      |  |             |                                    |
|      | Answer   | _           |                                    |
|      |  |             |                                    |
| 13   | Here is a circle                                 |             |                                    |
|      |  |             |                                    |
|      | Circle the word that describes the shaded part.  |             |                                    |
|      |  | [1 mark]    |                                    |
|      | radius sector chord                              | Segment     |                                    |
|      |  |             |                                    |
|      |  |             |                                    |
|      |  |             |                                    |
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| Summ | er 2019  | Turn over ► |                                    |



14 Teachers need to pass literacy and numeracy tests before they can qualify. The,

> Literacy test has 80 marks Numeracy test has 70 marks.

A trainee teacher scores

85% on the Literacy test 90% on the Numeracy test

To pass and become a teacher you need to score 87% of the total marks.

Does the trainee teacher pass?

You must show your working out.

[4 marks]

Do not write outside the

box

Answer

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4

|                 |                      |                   | 13                      |                                  |           |
|-----------------|----------------------|-------------------|-------------------------|----------------------------------|-----------|
| 5 <b>(a)</b> Si | implify              |                   | $\frac{6x^2y^4}{9xy^5}$ | l                                | [2 marks] |
|                 | Δ                    | nswer             |                         |                                  |           |
| ( <b>b)</b> S   | olve                 |                   | $\frac{x-10}{4} = 6$    |                                  | [2 marks] |
|                 |                      |                   |                         |                                  |           |
|                 | An                   | swer              |                         |                                  |           |
| This            | s table sho          | ows information a | about journeys X and Y. |                                  |           |
|                 |                      | Distance          | Time taken              | Average                          |           |
|                 |                      | travelled         |                         | speed                            |           |
|                 | X                    | travelled         | 2 hour 15 minutes       | 56 mph                           | -         |
|                 | X<br>Y               | 33 miles          | 2 hour 15 minutes       | 56 mph<br>66 mph                 |           |
| Cor             | X<br>Y<br>nplete the | 33 miles          | 2 hour 15 minutes       | <b>speed</b><br>56 mph<br>66 mph | [2 marks] |
| Cor             | X<br>Y<br>nplete the | 33 miles          | 2 hour 15 minutes       | <b>speed</b><br>56 mph<br>66 mph | [2 marks] |
| Cor             | X<br>Y               | 33 miles          | 2 hour 15 minutes       | speed<br>56 mph<br>66 mph        | [2 marks] |
| Cor             | X<br>Y               | 33 miles          | 2 hour 15 minutes       | speed<br>56 mph<br>66 mph        | [2 marks] |

| Work out the number of silver medals. [4 marks] | 17   | The pie chart shows some information about the medals the United States received at the Rio Olympics in 2016.<br>United States Medal Results | Do not write<br>outside the<br>box |  |  |  |
|---|--|--|------------------------------------|--|--|--|
|   | There were 120 medals in total.<br>Work out the number of silver medals. |  |                                    |  |  |  |
| Answer<br>www.missbsresources.com 4             |  |  |                                    |  |  |  |
| www.missbsresources.com 4                       |  | Answer   |                                    |  |  |  |
|   |  | www.missbsresources.com  | 4                                  |  |  |  |

| 18 | Work out the length x.       Not drawn accurately         x       40°         12 cm       [2 marks] | Do not write<br>outside the<br>box |
|----|---|------------------------------------|
|    | Answercm  |                                    |
| 19 | Express 1320 as a product of its prime factors in index form. [3 mark]                              |                                    |
|    | Answer  |                                    |
|    | www.missbsresources.com   | 5                                  |



|    |                      |                        |                           | -                                  |
|----|----------------------|------------------------|---------------------------|------------------------------------|
| 21 | This is a square.    | 2(x-3) cm              | 1                         | Do not write<br>outside the<br>box |
|    |                      |                        |                           |                                    |
|    |                      |                        | 7 <i>x</i> – 27 <i>cm</i> |                                    |
|    |                      |                        |                           |                                    |
|    | Work out the perimet | er of the square.      | [5 marks]                 |                                    |
|    |                      |                        |                           |                                    |
|    |                      |                        |                           |                                    |
|    |                      |                        |                           |                                    |
|    |                      |                        |                           |                                    |
|    |                      |                        |                           |                                    |
|    |                      |                        |                           |                                    |
|    |                      |                        |                           |                                    |
|    | Apowor               |                        |                           |                                    |
|    | Answer               |                        |                           |                                    |
|    |                      |                        |                           |                                    |
|    | V                    | ww.missbsresources.com |                           | 5                                  |



Summer 2019 Practice Paper 1

|      | 19  |                                    |
|------|---|------------------------------------|
| 24   | Yasin uses four cards to make 4-digit numbers.                                  | Do not write<br>outside the<br>box |
|      | 1 5 7 9   |                                    |
|      | How many different 4-digit numbers can he make that are less than 3000?         |                                    |
|      | [2 marks]   |                                    |
|      |   |                                    |
|      |   |                                    |
|      |   |                                    |
|      |   |                                    |
|      | Answer  |                                    |
|      |   |                                    |
|      |   |                                    |
|      |   |                                    |
| 0E   | The length of a cut piece of rope $L$ is 15.2 cm correct to one desired place   |                                    |
| 25   | Write down the error interval for the length of the piece of rope $\frac{1}{2}$ |                                    |
|      | [2 marks]   |                                    |
|      | []  |                                    |
|      |   |                                    |
|      |   |                                    |
|      |   |                                    |
|      |   |                                    |
|      | $\_\_\_\_ \leq l < \_\_\_$  |                                    |
|      |   |                                    |
|      |   |                                    |
|      |   |                                    |
|      |   |                                    |
|      |   |                                    |
|      |   |                                    |
|      | www.missbsresources.com   | 4                                  |
| Cumm |   |                                    |

Do not write outside the box

26 Here is some information about 40 buses arriving back at the bus depot.

| Number of minutes late, t | Number of<br>buses | Midpoint |  |
|---------------------------|--------------------|----------|--|
| $0 \le t < 5$             | 8                  |          |  |
| $5 \le t < 15$            | 11                 |          |  |
| $15 \le t < 20$           | 15                 |          |  |
| $20 \le t < 30$           | 6                  |          |  |
| $t \ge 30$                | 0                  |          |  |

**26 (a)** Work out an estimate of the mean number of minutes late.

[3 marks]

Answer

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**26 (b)** The depot manager scrutinises the information in more detail.

| Number of<br>minutes late, t | Number of<br>buses |
|------------------------------|--------------------|
| $0 \le t < 5$                | 8                  |
| $5 \le t < 10$               | 0                  |
| $10 \le t < 15$              | 11                 |
| $15 \le t < 20$              | 15                 |
| $20 \le t < 25$              | 1                  |
| $25 \le t < 30$              | 5                  |
| $t \ge 30$                   | 0                  |

She works out an estimate of the mean using this information.

How does her estimate compare with the answer to part (a)? Tick **one** box.

[1 mark]



1



5

box

**29** A bag contains counters that are purple, yellow, blue and white.

| Counter     | Purple | Yellow     | Blue         | White          |
|-------------|--------|------------|--------------|----------------|
| Probability | 22     | 2 <i>x</i> | <i>x</i> + 5 | 3 <i>x</i> + 7 |

A counter is chosen at random.

The probability the counter is purple is  $\frac{11}{50}$ .

Work out the probability it is white.

[5 marks]

Answer

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5

Do not write outside the box

|  |           | Do not write       |
|--|-----------|--------------------|
| <b>30</b> The value of a house £V is given by                                |           | outside the<br>box |
| $V = 154\ 000 \times 1.005^t$  |           |                    |
|  |           |                    |
| <b>30 (a)</b> Write down the value of the house when $t = 0$                 |           |                    |
|  | [1 mark]  |                    |
|  |           |                    |
|  |           |                    |
|  |           |                    |
|  |           |                    |
| Answer   |           |                    |
| 30 (b) . What is the value of the house often $4$ vector $2$                 |           |                    |
| <b>30 (b)</b> What is the value of the house after 4 years?                  | [1 mark]  |                    |
|  |           |                    |
|  |           |                    |
|  |           |                    |
|  |           |                    |
|  |           |                    |
|  |           |                    |
| Answer   |           |                    |
| <b>30 (c)</b> After how many years will the house's value he shows \$160,000 |           |                    |
| 30 (c) Alter now many years will the nouse's value be above £ 160 000        | []        |                    |
|  | [3 marks] |                    |
|  |           |                    |
|  |           |                    |
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| Answer   |           |                    |
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| End of Questions   |           |                    |
|  |           | <br>E              |
| www.misspsresources.com  |           | 3                  |