Surname ..... **Candidate number** .....

First name .....

Current school .....

mgs Founded 1515 | The Manchester Grammar School

Entrance Examination 2019

Arithmetic Section A

30 minutes

Do not open this booklet until told to do so

Calculators may not be used

Write your names, school and candidate number in the spaces provided at the top of this page.

You have 30 minutes for this paper which is worth 20 marks.
Each question is worth 1 mark.

Answer all the questions, attempting them in order and writing your answers clearly. If you find that you cannot answer a question straight away leave it blank and return to it later if you have time. Try not to leave blank answer spaces at the end, instead make the best attempt at an answer that you can.

If you need to change an answer cross it out neatly and write the new answer alongside the box. You may use rough paper for working out, this will not be marked.

Marker 1	Methods Q1-10	Problems Q11-20	**Marker 1 TOTAL**	**Marker 2 CHECK**	**AGREED MARK**
Number Correct					
Number Wrong					

1. Work out 463 + 327

1	

2. Express $\frac{18}{25}$ as a decimal

2	

3. Work out 547 x 3000

3	

4. Work out 3.19 - 1.72

4	

5. Add the **product** of 5 and 13 to the **sum** of 5 and 13

5	

6. What is the missing number in this list

   101, 86, 74, 65, ..., 56

6	

7. Work out $3\frac{3}{4} \div 2\frac{1}{2}$, giving your answer in its simplest form

7	

8. What is 30% of 550cm^3

8	cm^3

9. Express 42 minutes as a fraction of one hour, giving your answer in its simplest form

9	

10. What is the missing number in the following sum

    4,060,800 = 4,000,000 + ... + 800

10	

FOR MARKER USE ONLY

	Q1 - 10
Number Correct	

	Q1 - 10
Number Wrong	

11. John thinks of a number. He multiplies that number by four and then adds three to the result. If the answer he obtains is 35, what is the number he first thought of?

11	

12. In a triangle, the largest angle is two times the middle angle and the middle angle is three times the smallest angle. What is the size of the **largest** angle?

12	°

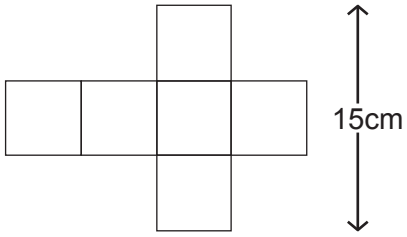
13. Alison has 6 yellow discs, 5 blue discs and 9 red discs which she places in a bag. When she draws one disc out, what is the probability that the disc is **NOT** red?

13	

14. A shopkeeper buys a box of 60 apples for £12. If he finds that $\frac{1}{10}$ of the apples are bad and can't be sold, at what price must he sell each of the good apples so that he makes a total **profit** of £15?

14	p

15. In the picture below is the net of a cube. What would be the total surface area of the outside of the cube when the net is made into the cube?



15	cm^2

16. Two bottles of water and three small bags of fruit cost a total of £2.55. If a bottle of water costs 15p **more** than a bag of fruit, what is the cost of a bag of fruit?

16	p

17. Bilal has made a box in the shape of a cuboid with sides 4cm, 5cm and 32cm. He wants to make another **different** shaped box but with the **same** volume. This box will have a height of 10cm and a square base. What will be the length on the base?

17	cm

18. A large number of buses stop at the bus stop at the end of Old Hall Lane. The 42 bus stops there every 6 minutes, the 43 bus stops there every 8 minutes and the 45 bus stops every 15 minutes. If all the buses stop at the Old Hall Lane stop at 4.00pm, write down the total number of buses that will call at the stop **between** 4.20 and 4.50pm.

18	

19. In a school table-tennis league each team plays each of the other teams **twice** during the year, once at home and once away. If there are 30 matches in total during the season, how many teams are there in the table-tennis league?

19	

20. Chen writes down a two digit number. He finds that if he swaps the digits of the number round, the new number he creates is three more than one third of the original number. What was the **original** number?

20	

This is the end of the Examination

Use any remaining time to check your work or try any questions you have not answered.

FOR MARKER USE ONLY

	Q11 - 20
Number Correct	

	Q11 - 20
Number Wrong	