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

First name .....

Current school .....

mgs Founded 1515 | The Manchester Grammar School

Entrance Examination 2013
Arithmetic Paper 1

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.

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 as 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	Marker 2	**Agreed mark**
Number correct			
Number wrong			

1. Write in figures the number two hundred and twelve thousand and fifty seven

1	

2. Work out 675 - 428

2	

3. Work out 254 x 80

3	

4. Write 0.28 as a fraction in its simplest form

4	

5. What is the product of the sum of 6 and 3 with the difference between 2 and 10

5	

6. In a triangle, two angles are the same and the third angle is THREE times bigger than either of the others. What is the size of the biggest angle?

6	°

7. Neil thinks of a number, he halves it and then subtracts 9. If the answer he gets is 12, what was the original number he thought of?

7	

8. John the electrician needs to cut three lengths of wire from the 5 metre roll he has brought with him to do a job. The three lengths he cuts are 85 cm, 2.5 metres and 650 mm. How much wire (in cms) will he have left after cutting off his lengths?

8	cm

9. My digital watch is set to show time according to the 24 hour clock. It is currently showing 21:10. How long will it be until it next shows a time with the digits 2, 1, 1 and 0 but in any order?

9	hrs mins

10. Two shirts and three tops cost £29. Three shirts and one top cost £19. What is the cost of a top?

10	£

11. Work out 2.35 x 1.8

11	

12. Work out 15% of £5

12		p

13. Work out $\frac{3}{4}$ of $\frac{5}{6}$ of 48

13	

14. Two metal weights in the form of cuboids have the same volume. One is 20 cm long, 16 cm wide and 9 cm high. The other weight is 10 cm wide and 12 cm high. What is its length if the volume of a cuboid is given by length x width x height?

14		cm

15. On a wet week in Rusholme the mean (or average) rainfall over the five days from Monday to Friday was 12 mm. On Monday, when the rain was heaviest there was 22 mm, but on Friday there was only 5 mm of rain. What was the mean rainfall on the other three days?

15		mm

16. When I emptied my pockets recently I found I had a mixture of 10p, 20p, 50p and £1 coins. When I counted the value of all the coins, the total amount came to £7.20 and there was equal numbers of each coin. How many coins were there altogether?

16	

17. In the sequence of numbers 2, 3, 5, 8, 12 . . . . . what is the first **three digit** number?

17	

18. What is the total when you add together all the factors of 72 (including 1 and 72 itself)?

18	

19. How many three digit numbers contain at least two sevens?

19	

20. Alison has a large number of coloured pencils. When the pencils are divided between two of her friends there is one pencil left over. If they are divided between three friends there are two left over. Between four friends there would be three left over. Between five friends there would be four left over and between six friends, five left over. What is the smallest number of coloured pencils that Alison could have?

20	

END OF PAPER

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