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Maths Sample Paper

Candidate's Name: \_\_\_\_\_

Starting Time: \_\_\_\_\_ Finishing Time: \_\_\_\_\_

PAPER ANALYSIS

Candidate's Score: \_\_\_\_\_ out of 40 Percentage: \_\_\_\_\_%

Candidate's Rank: \_\_\_\_\_ out of \_\_\_\_\_

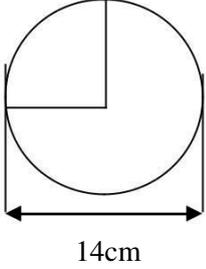
Highest Score: \_\_\_\_\_% Average Score: \_\_\_\_\_%

Notes/Remarks

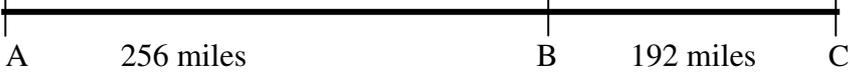
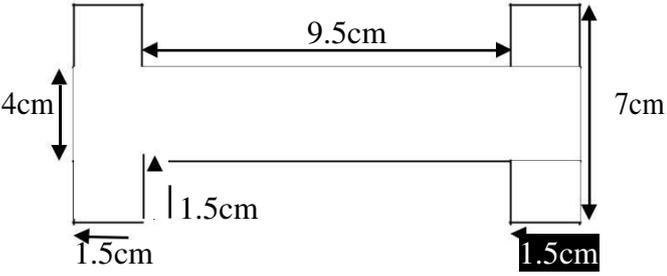
Show your workings neatly underneath the question and write the final answer in the space provided on the right. Some marks will be awarded for the correct working out even if the answer is incorrect.

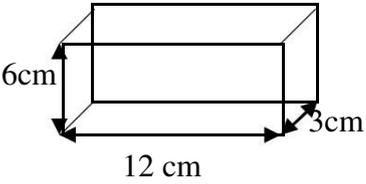
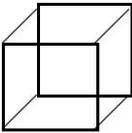
1.	Calculate A) $376 + 628 =$ B) $836 - 429 =$  C) $12 \times 7 =$  D) $96 \div 8 =$	 <hr/> <hr/> <hr/> <hr/>
2.	A scale of a map is 1:20000. Find the actual length in km represented on the map for the following: A) 25cm  B) 52.5cm	 <hr/> <hr/>
3.	A) Add 10 to the difference between 3.54 and 4 B) Find the sum of 50g, 250g and 600g as a fraction in kg	 <hr/> <hr/>
4.	A) Express the sum of $\frac{1}{3}$ km, $\frac{2}{3}$ km and $\frac{3}{5}$ km in decimal B) $\_K\_ + \frac{4}{5} = 2.5$ , find the value of K in decimal	 <hr/> <hr/>
5.	Calculate $1734 \div 17$	 <hr/>
6.	A) $76.47 \times 10^3$ B) $\_\_\_\_\_\_ \div 1^2 = 7649.97$	 <hr/> <hr/>

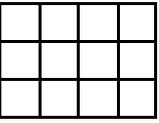
7.	<p>A) Express <math>\frac{1}{6}</math> of 5 days in hours</p> <p>B) Express <math>\frac{2}{5}</math> of 15 hours in minutes</p>	<hr/> <hr/>
8.	<p>Central road in Southampton is 12cm long on a map. If the road is actually 3.6km long, what is the scale of the map?</p>	<hr/>
9.	<p>Kevin borrows £5000 from a bank at <math>4\frac{1}{2}\%</math> interest per annum. How much money does he have to pay back to the bank after a period of 1 year 6 months?</p>	<hr/>
10.	<p>Akshaiie weighed 3kg at birth. He weighed 10kg when he was 18 months old. If he gains the same weight every month on average what would be his weight when he is 3 years old?</p>	<hr/>
11.	<p>During the summer sale, all the sandals were increased by 10% and all the winter boots were reduced by 75%. Sam bought the following: 2 summer sandals at £20 each (before the price increase) 3 winter boots at £50 each (before the discount)</p> <p>A) How much did he pay altogether after the discount?</p> <p>B) Why do you think winter boots were reduced during summer sale?</p> <hr/>	<hr/>
12.	<p>The average of 7 consecutive even numbers is 42. Find the sum of the largest number and the smallest number.</p>	<hr/>

13.	28% of the 500 people at an exhibition are adults. If 75% of the children are girls, how many boys are there?	<hr/>
14.	<p>Write down the first two terms of each sequence using the nth term given.</p> <p>A) <math>14 - n</math>      _____      _____</p> <p>B) <math>6n + 7</math>      _____      _____</p>	
15.	<p>Find the area of this three-quarter circle (not drawn to scale)</p>  <p style="text-align: center;">14cm</p>	<hr/>
16.	<p>If these numbers are arranged in descending order, which one will be fourth?</p> <p><math>\frac{8}{10}</math>, 88.08, <math>\frac{88}{100}</math>, <math>(80+8.8)</math>, <math>\frac{8}{100}</math></p>	<hr/>
17.	<p>Robert caught a train in London at 9.30 in the morning and arrived in Newcastle at 3.42 in the afternoon. There were 7 stops in between. How long did the journey take?</p>	<hr/>
18.	<p>Use this information to answer the following questions.</p> <p>A) Charlie goes to the school fair and he pays to get in. He visits 3 side shows and has a cream tea. How much does Charlie spend altogether?</p> <p>B) Anna has £5 to spend at the fair. She must pay to get in. How many times can she visit the side show if she has a cream tea on first visit?</p>	<hr/> <hr/>

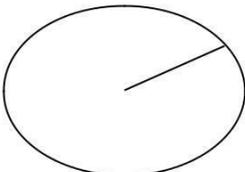
19.	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">             Shape 1         </div> <div style="text-align: center;">             Shape 2         </div> <div style="text-align: center;">             Shape 3         </div> </div> <p>Number of Sticks</p> <table style="width: 100%; text-align: center;"> <tr> <td>4</td> <td>7</td> <td>10</td> </tr> </table> <p>A) Find the <math>n</math>th term for the sequence</p> <p>B) Find the number of sticks in Shape 10</p>	4	7	10	<hr/> <hr/>																	
4	7	10																				
20.	<p>A pomegranate drink is made by mixing water with concentrated pomegranate juice. <math>\frac{2}{3}</math> of the pomegranate drink is water. How many litres of water will be in 12 litres of pomegranate drink?</p>	<hr/>																				
21.	<p>Write down the relevant numbers in the space given.</p> <p>3   20   14   17   27   12   8   35</p> <p>A) Even numbers</p> <p>B) Multiples of 5</p> <p>C) Factors of 24</p> <p>D) Prime numbers</p>	<hr/> <hr/> <hr/> <hr/>																				
22.	<p>Study the numbers carefully and find A.</p> <table style="width: 100%; text-align: center; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 5px;"> <table border="1" style="border-collapse: collapse;"> <tr><td>6</td><td>4</td></tr> <tr><td>2</td><td>4</td></tr> </table> </td> <td style="border: 1px solid black; padding: 5px;"> <table border="1" style="border-collapse: collapse;"> <tr><td>3</td><td>2</td></tr> <tr><td>1</td><td>4</td></tr> </table> </td> <td style="border: 1px solid black; padding: 5px;"> <table border="1" style="border-collapse: collapse;"> <tr><td>4</td><td>2</td></tr> <tr><td>3</td><td>8</td></tr> </table> </td> <td style="border: 1px solid black; padding: 5px;"> <table border="1" style="border-collapse: collapse;"> <tr><td>8</td><td>A</td></tr> <tr><td>4</td><td>6</td></tr> </table> </td> </tr> </table>	<table border="1" style="border-collapse: collapse;"> <tr><td>6</td><td>4</td></tr> <tr><td>2</td><td>4</td></tr> </table>	6	4	2	4	<table border="1" style="border-collapse: collapse;"> <tr><td>3</td><td>2</td></tr> <tr><td>1</td><td>4</td></tr> </table>	3	2	1	4	<table border="1" style="border-collapse: collapse;"> <tr><td>4</td><td>2</td></tr> <tr><td>3</td><td>8</td></tr> </table>	4	2	3	8	<table border="1" style="border-collapse: collapse;"> <tr><td>8</td><td>A</td></tr> <tr><td>4</td><td>6</td></tr> </table>	8	A	4	6	<p>A= _____</p>
<table border="1" style="border-collapse: collapse;"> <tr><td>6</td><td>4</td></tr> <tr><td>2</td><td>4</td></tr> </table>	6	4	2	4	<table border="1" style="border-collapse: collapse;"> <tr><td>3</td><td>2</td></tr> <tr><td>1</td><td>4</td></tr> </table>	3	2	1	4	<table border="1" style="border-collapse: collapse;"> <tr><td>4</td><td>2</td></tr> <tr><td>3</td><td>8</td></tr> </table>	4	2	3	8	<table border="1" style="border-collapse: collapse;"> <tr><td>8</td><td>A</td></tr> <tr><td>4</td><td>6</td></tr> </table>	8	A	4	6			
6	4																					
2	4																					
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3	8																					
8	A																					
4	6																					

23.	<p>Alex took 4 hours to travel from Town A to Town B. If Ben was travelling at the same average speed as Alex, how long would he take to travel from Town A to C, without stopping?</p> 	<hr/>
24.	<p>Calculate the perimeter of this shape (not drawn to scale)</p> 	<hr/>
25.	<p>Calculate the area of the shape in Question-24</p>	<hr/>
26.	<p>Linda goes to the Zumba fitness every weekday for five weeks during the holidays. She pays £3.60 each time she goes. How much does she pay in total during the holiday?</p>	<hr/>
27.	<p>Nisha's grandma is 5 times as old as Nisha was 3 years ago. If her grandma is 60, how old is Nisha?</p>	<hr/>

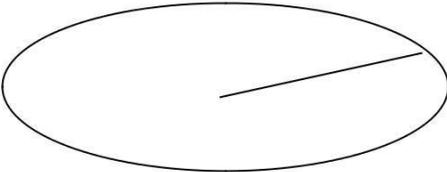
28.	Ryan has six 50 pence pieces, two 20 pence pieces, two ten pence pieces and five 5 pence pieces in his pocket. How much money does he have in total?	_____
29.	A box contains 17 blue pencils, 31 green pencils and 4 red pencils. If I pick a pencil from the box at random, what is the probability that I will pick out a green one?	_____
30.	How many 10cm cubes can be put exactly into an empty box, which measures 0.4m by 0.2 m by 0.2m?	_____
31.	Cuboid A has the same volume as cube B (not drawn to scale). Find	_____
	<p>the length of one edge of the cube B</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Cuboid – A</p> </div> <div style="text-align: center;">  <p>Cube- B</p> </div> </div>	_____
32.	The ratio of flour, sugar, butter and eggs in a cake is 7: 4: 3: 2 If 200g of sugar was used to bake the cake, how much flour was used?	_____

33.	Mr and Mrs Gerald take their 3 children to a special pop concert. Tickets cost £7.00 each for adults. The price of a child's ticket is half that of an adult's. How much does it cost the family to visit the pop concert?	<hr/>				
34.	<p>This is Sandra's function machine.</p> <table border="1" data-bbox="268 607 1134 719"> <tbody> <tr> <td data-bbox="268 607 483 719">?</td> <td data-bbox="491 607 699 719">subtract 16</td> <td data-bbox="707 607 914 719">divide by 7</td> <td data-bbox="922 607 1134 719">6</td> </tr> </tbody> </table> <p>What number did she start with?</p>	?	subtract 16	divide by 7	6	<hr/>
?	subtract 16	divide by 7	6			
35.	<p>A) Write 238 grams in kilograms.          B) Write 27 millilitres in litres.          C) Write 4.289 kilometres in metres.          D) Write 0.04centimetres in millimetres.</p>	<hr/> <hr/> <hr/> <hr/>				
36.	<p>The figure below is made up of 12 squares. How many squares are there altogether in the figure?</p> 	<hr/>				

37. A supermarket reported its sales have doubled from 2014 to 2015 and it has put up a chart to show the sales.



Sales in 2014  
2cm



Sales in 2015  
4cm

A) Do you think the diagram is a good comparison of the sales?  
\_\_\_\_\_

B) Explain how you can improve the chart.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

For questions 38-40, use the part of a railway timetable below.

London King's Cross	10 30	11 30	12 35	13 25	14 30
Peterborough	11 24	12 35	13 27	14 15	15 45
Newcastle	13 36	14 58	15 39	17 05	17 30

38.	How long does the 10 30 train take from London to reach Newcastle?	_____
39.	How long does the 14 15 train take from Peterborough to reach Newcastle?	_____
40.	The 12 35 train leaves at the scheduled time from London King's Cross to reach Newcastle, but due to signalling problems it was delayed by 55 minutes. At what time did it reach Newcastle?	_____

1.	A) 1004 B) 407 C) 84 D) 12	21.	A) 20, 14, 12, 8 B) 20, 35 C) 3, 12, 8 D) 3, 17
2.	A) 5km B) 10.5km A) 1cm: 20000cm  1cm : 0.2km 0.2 km × 25 = 5km B) 1cm : 0.2km  52.5 km × 25 = 10.5km	22.	8 Workings <hr/> (Top left) × (Bottom right) = 6 × 4 = 24 (Bottom left = 2 and Top right = 4) Same rule applies for shape 4  (Top left) × (Bottom right) = 8 × 6 = 48 (Bottom left = 4 and Top right = 8)
3.	A) 10.46 B) 9/10 kg	23.	7 hours
4.	A) 1.6 B) 1.7	24.	45 cm
5.	102	25.	59 cm <sup>2</sup>
6.	A) 76470 B) 7649.97	26.	£90
7.	A) 20 hours B) 360 minutes	27.	15 years
8.	1:30000 Workings  3.6km = 360000cm  360000cm ÷ 12 = 30000cm	28.	£3.85
9.	£5337.50 Workings <hr/> Interest per year = 4.5% × £5000 = £225 Interest in 1 <sup>1</sup> / <sub>2</sub> years = 1.5 × £225 = £337.50 Total = £5000 + £337.50 = £5337.50	29.	31 <sub>/52</sub>
10.	17 kg	30.	16 cubes Workings  Volume of the cube = 1000cm <sup>3</sup> (10×10×10)

