

Name _____

Candidate Number _____

Room Number _____

WITHINGTON GIRLS' SCHOOL

ENTRANCE EXAMINATION 2020

MATHEMATICS

PAPER 2

TIME: 40 MINUTES

- Some questions in this paper involve new ideas, but there are examples to guide you and help you understand these new ideas.
- Look at the examples carefully and try to answer all the questions.
- If you cannot answer a question, leave it and go on to the next one.
- Use any time you have left to check your answers and go back to any questions you have left out.

CALCULATORS MUST NOT BE USED

PAPER 2 TOTAL		
Marker's Initials		
Checker's Initials		

1. Complete this table.

Decimal	Fraction
0.5	$\frac{1}{2}$
	$\frac{3}{4}$
0.8	
	$\frac{1}{8}$

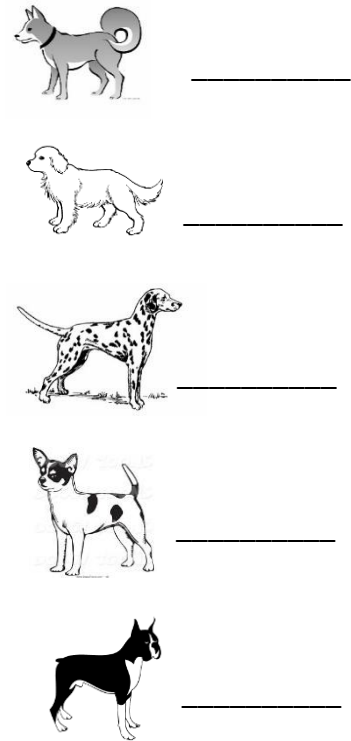
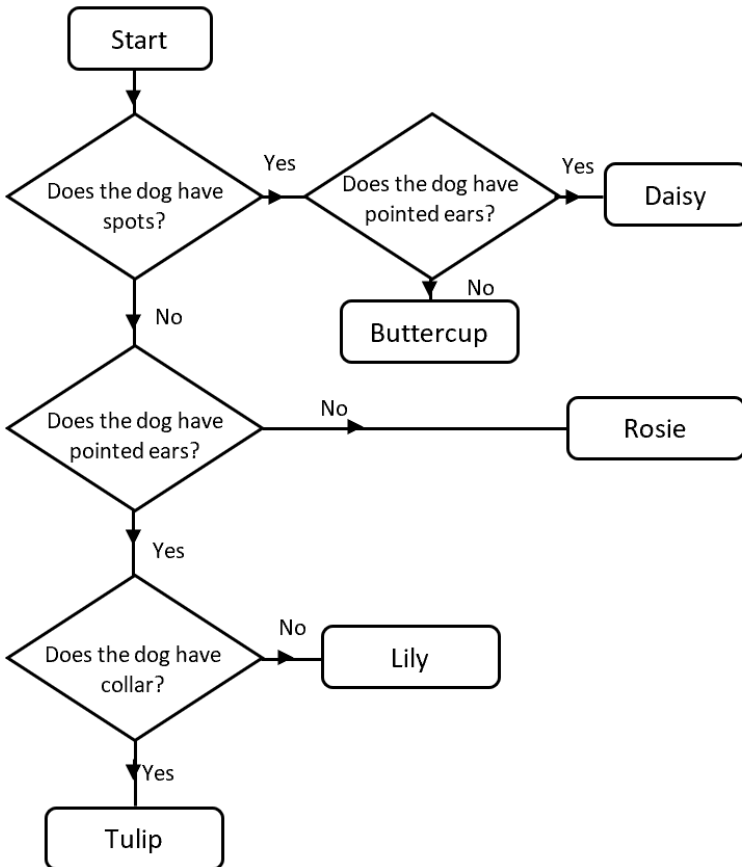
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2. A meal for 6 people cost £104.10.
If each person paid the same amount, how much did each pay?

£ _____

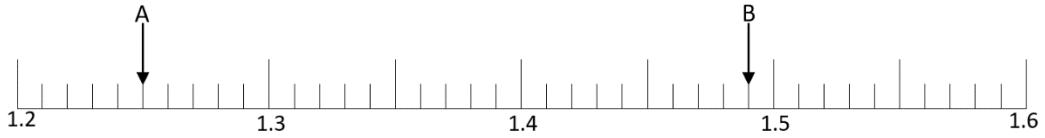
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3. Use the flow diagram to find the name of each dog



1
1
1

4. What numbers do the arrows point to?



A = _____ B = _____

1
1

5. How long is the pencil?

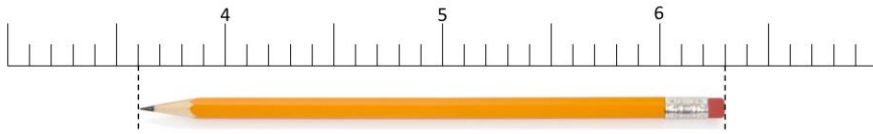
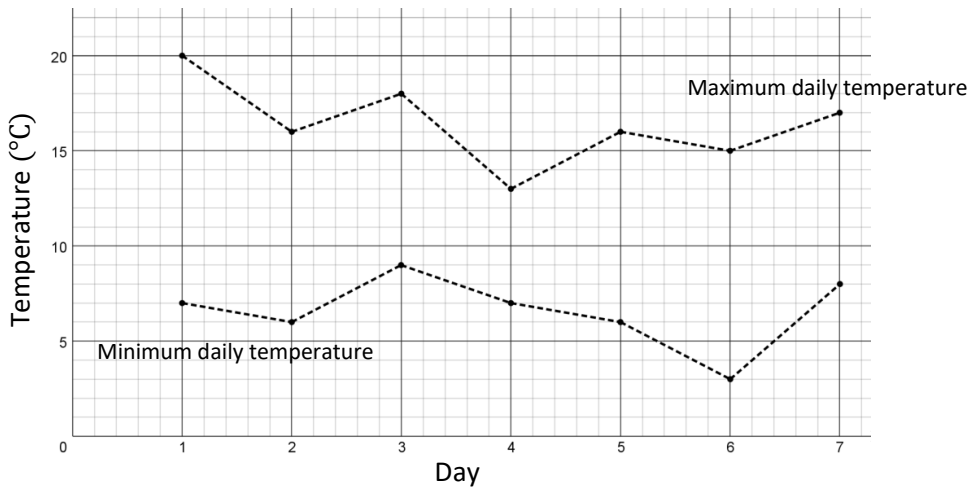


Diagram not to scale

Length = _____ cm

1

6. The maximum and minimum daily temperatures in Withington were recorded for 7 days.



(a) What was the difference between the highest and lowest temperature on day 5? _____ °C

1

(b) On which days was the difference between the maximum and minimum daily temperature 9°C? _____ and _____

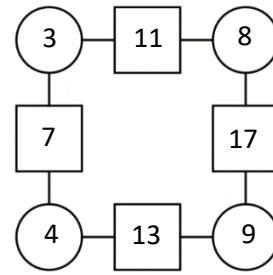
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(c) Which day had the smallest difference between the maximum and minimum daily temperatures? _____

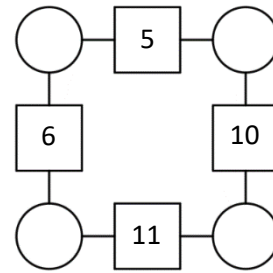
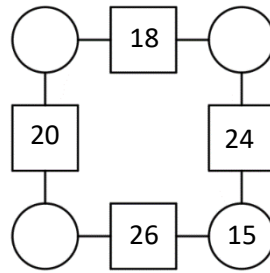
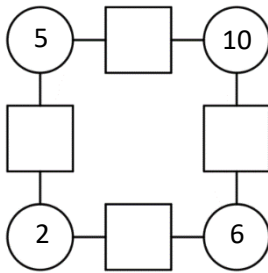
1

		Do not write in this margin
<p>7. 12.5% of Year 7 pupils at Withington play the violin. There are 11 pupils who play the violin in Year 7. How many pupils are there in total in Year 7?</p> <p style="text-align: right;">_____</p>	<p>1</p> <p>1</p>	
<p>8. A sequence of numbers is 2, 4, 6, 8, 2, 4, 6, 8, 2, 4,.....</p> <p>(a) What is the 16th number in the pattern?</p> <p style="text-align: right;">_____</p> <p>(b) What is the 105th number in the pattern? (You are not expected to write them all out.)</p> <p style="text-align: right;">_____</p>	<p>1</p> <p>1</p> <p>1</p>	
<p>9. In the January sales the price of a jumper was reduced by $\frac{1}{5}$ The sale price was £48. Work out the original price.</p> <p style="text-align: right;">£ _____</p>	<p>1</p> <p>1</p>	
<p>10. A train stopped at Stockport station. 42 people got off and 60 people got on. There were 322 people on the train when it left Stockport. How many were on the train before it stopped at Stockport?</p> <p style="text-align: right;">_____</p>	<p>1</p> <p>1</p>	

11. In the diagram you get the number in the square box by adding up the numbers in the circles on either side. Here is an example:

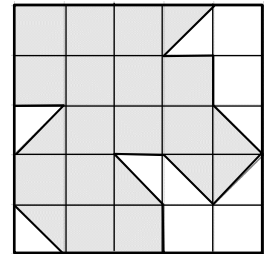


Complete the following:



1
1
1
1
1

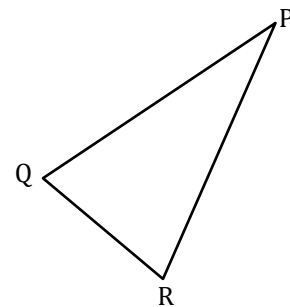
12. What percentage of the large square is shaded?



_____ %

1
1
1

13. The triangle PQR has a perimeter of 28 cm. Sides PQ and PR are each three times the length of QR. Calculate the length of QR.



QR = _____ cm

1
1

14. \otimes means square the first number and then add three times the second number

$$a \otimes b = a^2 + 3b$$

For example:

$$5 \otimes 2 = 25 + 3 \times 2 = 31$$

Find values for \blacksquare , \star and \blacklozenge .

(a) $4 \otimes 5 = \blacksquare$

$\blacksquare = \underline{\hspace{2cm}}$

1

(b) $6 \otimes \star = 48$

$\star = \underline{\hspace{2cm}}$

1

1

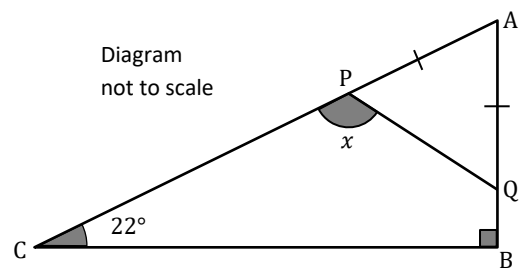
(c) $\blacklozenge \otimes 5 = 79$

$\blacklozenge = \underline{\hspace{2cm}}$

1

1

15. ABC is a right-angled triangle.
 P is a point on AC and Q is a point on AB
 APQ is an isosceles triangle, with AP = AQ as shown.
 Angle C is 22° .
 Find the angle x .



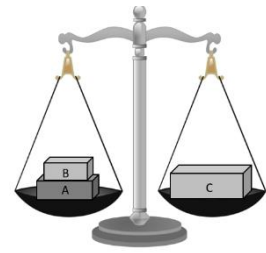
$x = \underline{\hspace{2cm}}^\circ$

1

1

1

16. Tara has three parcels.
 Parcels A and B together weigh the same as parcel C.
 The three parcels weigh 900 grams altogether.
 Parcel A weighs 350 g.
 How much does parcel B weigh?



B = _____ g

1
1
1

17. There are 400 passengers on an aeroplane.
 $\frac{9}{20}$ of the passengers are men.
 30% of the passengers are women.
 The rest of the passengers are children.
 How many children are on the aeroplane?

1
1
1

18. In this diagram the shaded rectangles all have the same width (w).
 Find the width, w .

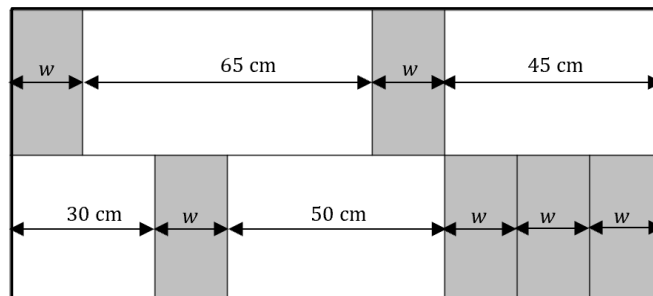


Diagram not to scale

$w =$ _____ cm

1
1
1

19. (a) Annabel has 9 cards, each with a different number from 1 to 9 on it.



She puts the cards into three piles so that the total in each pile is 15.
How could she have done this?

Pile 1 _____ Pile 2 _____ Pile 3 _____

1
1

(b) Samara has seven number cards.



A and B stand for different whole numbers less than 10.
The sum of the numbers on all seven cards is 45.
What are the values of A and B?

A = _____ B = _____

1
1
1

(c) Nicola also has seven number cards.



C and D stand for different whole numbers less than 10.
The sum of the numbers on all seven cards is 36.
Find two different possible pairs of values for C and D.

C = _____ D = _____ or C = _____ D = _____

1
1
1

