Benjamin Britten Academy of Music and Mathematics

MATHEMATICS HOMEWORK BOOKLET

Year 7 Book B

SPRING TERM

NAME:

CONTENTS

WEEK	HOMEWORK TITLE
1	Numeracy
2	Place Value
3	Research task
4	Numeracy
5	Averages
6	Mathswatch
7	Numeracy
8	Sequences
9	Real life maths
10	Numeracy
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12	Mathswatch

How does it work?

- One homework will be set a week
- The set and due date for each homework will be written on this page
- Some homework will need completing on this booklet, others on the internet
- If you need help logging onto a website, you need to see your class teacher
- If you need help with the homework task, you must speak to your teacher before the due date

Log in details:

Below are the log in instructions you will need in order to access and complete some of the homework tasks in this booklet.

Mathswatch

Username—firstnamelastname@benjamin

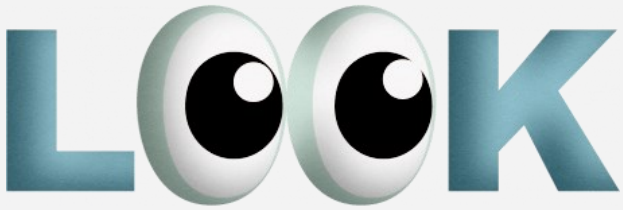
Password—your DOB (format: monthDYYYY)

Completing your homework

All homework tasks need to be completed in this booklet or on a specific website.

There are also **answers** for all booklet tasks at the back of the booklet. Part of your homework task each week is to **mark your work**. Make sure you mark all your answers in another colour pen, making any corrections if you need to.

Remember - if you need help, you must speak to your teacher **before** the due date.



If you see the logo above next to a task, you can type the clip number into Mathswatch for extra help!

Watch the video and make notes, then try the homework task again. If you still need help, then speak to your maths teacher at school.

HOMEWORK 1: NUMERACY

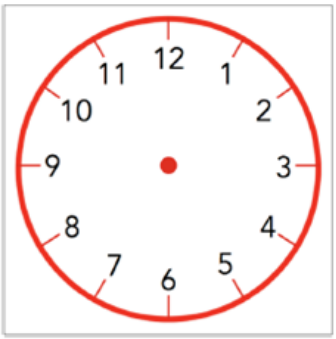
Recall and Recap

MENTAL STRATEGIES - do these in your head

Q	Question	Answer
1	3 + 17	
2	What is double 55?	
3	112 + 10	
4	29 – 10	
5	6 = 1 + □	
6	58 – 11 = 58 – 8 – □	
7	73 + 73 = □ × 73	
8	Draw hands on the clock face showing 10:10 am	
9	7 + 3	
10	□ + 46 = 100	
	Total out of 10	

TIMESTABLES – do these in your head

Q	Question	Answer
1	6 × 7 = □	
2	24 ÷ 4 = □	
3	4 × □ = 28	
4	24 ÷ □ = 4	
5	7 × 6 = □	
6	18 ÷ 6 = □	
7	□ × 4 = 4	
8	□ ÷ 2 = 3	
9	5 × 7 = □	
10	54 ÷ 6 = □	
	Total out of 10	



KEY SKILLS – you may use written calculations for these questions

Q	Question	Answer
1	481 + 1429	
2	$(9 - 5)^2 + 3 \times 4$	
3	Write One Thousand and Thirty Two in digits	
4	0.35 ÷ 100	
5	(-6) × (-10)	
6	Round 81.4358 to 2 d.p.	
7	(-5) + (-5)	
8	Round 21 to 2 s.f.	
9	Letter at (0, -1) y A B C D E F G H I J K L M N P x Q R S T U V W X Y Z	
10	1/4 = 3/□	
	Total out of 10	

HW 1

LOOK

N7b, N20, N19, A1

Problem solving!

Apply your core skills to the challenge question below...

LOOK

N3, N24

Runners

Lily finished **2nd** out of **8 runners** in a race.

How many runners finished the race **after** Lily?

.....

1 mark

Max was in a **different** race.

7 runners finished the race **before** Max.

3 runners finished the race **after** Max.

Altogether, how many runners finished the race?

.....

1 mark

HOMEWORK 2: PLACE VALUE

Let's start with the basics...

Write down these numbers in standard form.

Example	7 ten thousands + 3 thousands + 8 tens + 4 ones	=	73,084
1)	8 thousands + 7 hundreds + 4 tens + 5 ones	=	
2)	5 thousands + 2 hundreds + 9 tens + 3 ones	=	
3)	4 ten thousands + 7 thousands + 3 hundreds	=	
4)	2 ten thousands + 8 hundreds + 5 tens + 9 ones	=	
5)	7 ten thousands + 2 thousands + 8 tens + 2 ones	=	

LOOK

A6, A7, A10, A17

Applying your skills

Bronze	Silver	Gold
Q1) What is the tens digit of 467?	Q1) What is the hundreds digit of 5417?	Q1) What is the tens digit of $2500 - 1650$?
Q2) What is the hundreds digit of 917?	Q2) What is the thousands digit of 4652?	Q2) What is the hundreds digit of $437 - 111$?
Q3) What is the hundreds digit of 328?	Q3) What is the hundreds digit of 6875?	Q3) What is the thousands digit of $2381 - 1111$?
Q4) What does the 6 digit in 613 represent?	Q4) What does the 9 digit in 9214 represent?	Q4) What is the thousands digit of $3457 + 3108$?
Q5) What does the 3 digit in 432 represent?	Q5) What is the tens digit of 4856?	Q5) What is the tens digit of $1786 + 1568$?
Q6) What is the tens digit of 481?	Q6) What does the 7 digit in 8725 represent?	Q6) What is the tens digit of $4446 - 3978$?

Problem solving!

LOOK

A10, A6, A7a

Apply your core skills to the challenge questions below…

As we move a place to the left on the place value chart, the value gets ten times bigger.

3 tens = 3 ones x 10 = 30 ones.

3 hundreds = 3 tens x 10 = 30 tens (or 300 ones)

3 thousands = 3 hundreds x 10 = 30 hundreds (or 300 tens)

Th	H	T	O
			3
		3	0
	3	0	0
3	0	0	0

Work out these missing conversion facts

1)	5 hundreds = _____ ones	2)	60 ones = _____ tens
3)	7 thousands = _____ hundreds	4)	30 tens = _____ hundreds
5)	60 ones = _____ tens	6)	3 thousands = _____ hundreds
7)	50 hundreds = _____ thousands	8)	1 thousand = _____ ones
9)	8 hundreds = _____ ones	10)	40 ones = _____ tens
11)	4 thousands = _____ tens	12)	80 hundreds = _____ thousands
13)	30 tens = _____ ones	14)	_____ hundreds = 400 ones
15)	70 tens = _____ hundreds	16)	5 hundreds = _____ tens
17)	60 tens = _____ hundreds	18)	4000 ones = _____ thousands
19)	50 tens = _____ ones	20)	4000 ones = _____ hundreds
21)	_____ thousands = 200 tens	22)	_____ hundreds = 9 thousands

PUZZLE TIME – find the answer to the riddle below in the table!

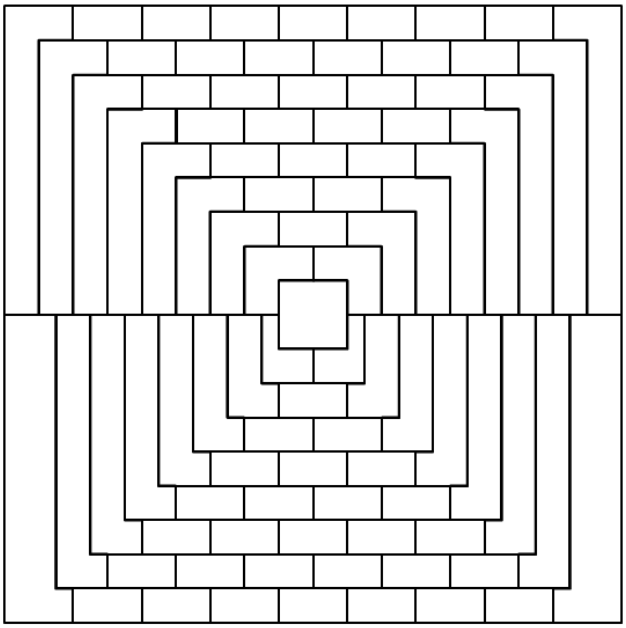
- I am worth more than 30 hundreds.
- I am less than 7000 ones.
- My tens digit is greater than my ones.
- I am a multiple of 5.
- Who am I?

3726	5290	6423
7185	4428	5925

HOMEWORK 3: FOUR COLOUR THEOREM

Part A

Colour in the pattern so that no areas which touch have the same colour. Try to use the least number of different colours possible.



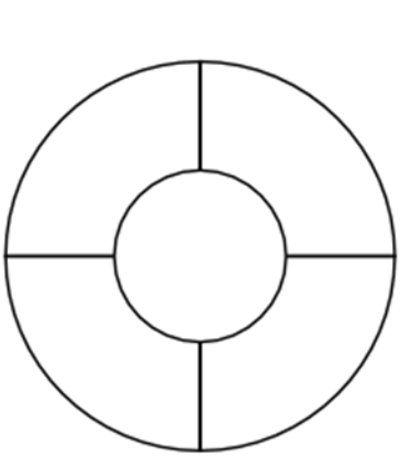
What is the least number of different colours that are needed?

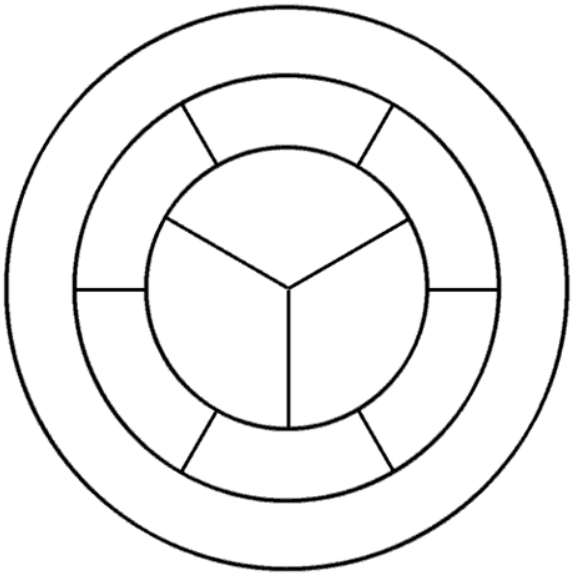
Part B

Now make your own pattern using the same rule (you can't have the same colours next to each other). Try to make a pattern which needs the greatest number of different colours.

What is the greatest number of different colours that are needed?

How many colours do you need to colour the two pictures below so that no two touching parts are the same colour? Use your own colours to test it out. Try to use the minimum number of colours possible.





Thanks to the Four Colour Theorem, we know that any picture of this kind only requires four different colours (to have no touching parts be the same colour).

RESEARCH: Use the internet or books to answer the following questions.

Q1 a) What is cartography?

b) How does the Four Colour Theorem link to cartography?

Q2 Why do some people believe that the Four Colour Theorem has not been proven properly?

Q3 Who famously thought he had proved the Four Colour Theorem but found out ten years later that he had made a mistake?

HOMEWORK 4: NUMERACY

Recall and Recap

MENTAL STRATEGIES - do these in your head

Q	Question	Answer
1	□ + 3 = 5	
2	68 + □ = 100	
3	What is half of 4?	
4	189 – 10	
5	161 + □ = 240	
6	74 = 24 + □	
7	629 – 627	
8	9 × 5 = 45, so 45 ÷ 9 = □	
9	Write 8:23 am in 24 hour clock format	
10	2:15 pm is how many minutes after 2:05 pm?	
	Total out of 10	

TIMESTABLES – do these in your head

Q	Question	Answer
1	5 × 1 = □	
2	24 ÷ 8 = □	
3	5 × □ = 30	
4	45 ÷ □ = 9	
5	6 × 1 = □	
6	40 ÷ 4 = □	
7	□ × 1 = 10	
8	□ ÷ 3 = 9	
9	6 × 4 = □	
10	2 ÷ 2 = □	
	Total out of 10	

KEY SKILLS – you may use written calculations for these questions

Q	Question	Answer
1	What is 4/6 of 30?	
2	3 × 911	
3	16071 – 8966	
4	6.9 × 5.85	
5	8/10 as a decimal number	
6	23.8 + 0.55	
7	(-18) ÷ 9	
8	If a = 6 b = 8 and c = 4, what is the value of $(2b/c)^2$	
9	(-1) – (-3)	
10	Is 1 a factor of 3?	
	Total out of 10	

Problem solving!

Apply your core skills to the challenge questions below...

LOOK

N5, N6, N29

Multiplication grids

Write the missing numbers in these multiplication grids.

×	8	
9	72	
–6		30

×	0.2	
3		1.2
		6

HOMEWORK 5: AVERAGES

Recall and Recap:

Here is a fun rhyme to help you remember the three M's and the R:

Hey diddle diddle, the **median's** the middle,
You add then divide for the **mean**.

The **mode** is the one that you see the most,
And the **range** is the difference between.

Applying your skills

Averages and Range

Find the range of
(a) 9, 12, 6, 14, 11, 7
(b) 5, 3, 9, -4, 2, 1
(c) 1, 0, 1, 1, 0, 0, 1

Method Answer

Find the mode of
(a) 9, 5, 6, 1, 6, 3, 2
(b) 5, 2, 5, 3, 5, 4, 3, 3
(c) 3, 7, 5, 9, 12

Method Answer

Find the median of
(a) 8, 12, 11, 15, 9
(b) 6, 1, 9, 8, 11
(c) 19, 2, 14, 8, 11, 10, 4, 15

Method Answer

Find the mean of
(a) 13, 4, 7
(b) 4, 10, 15, 8, 5
(c) 5, -2, 0, 8, 3

Method Answer

Problem solving!

Apply your core skills to the challenge questions below... If false state why

LOOK

G8

True or False?	Averages and Range			
	For each statement, circle the correct response.			
1	4, 2, 8, 3, 9	The range is 5	True	False
2	5, 7, 8, 11, 12	The median is 8	True	False
3	9, 6, 6, 3, 4	The mode is 6	True	False
4	10, 1, 9, 4	The mean is 6	True	False
5	5, 6, 6, 8, 8, 9	The median is 6 and 8	True	False
6	1, 2, 3, 5, 6, 9	The median is 4	True	False
7	2, 3, 4	The mean, mode and median are all 3	True	False
8	5, 8, 2, 6, 3	There is no mode	True	False
9	8, 11, 6, 4, 6	The mean and the range are the same	True	False

HOMEWORK 6: MATHSWATCH

For this week's homework, your teacher will set you a task to complete on the website Mathswatch. The task will be based on the content you have learnt over the past half term in your maths lessons. You can use the space on the next page to do any working out if you need to.

Below are the log in instructions you will need in order to access and complete this homework task.

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Username— firstnamelastname@benjamin

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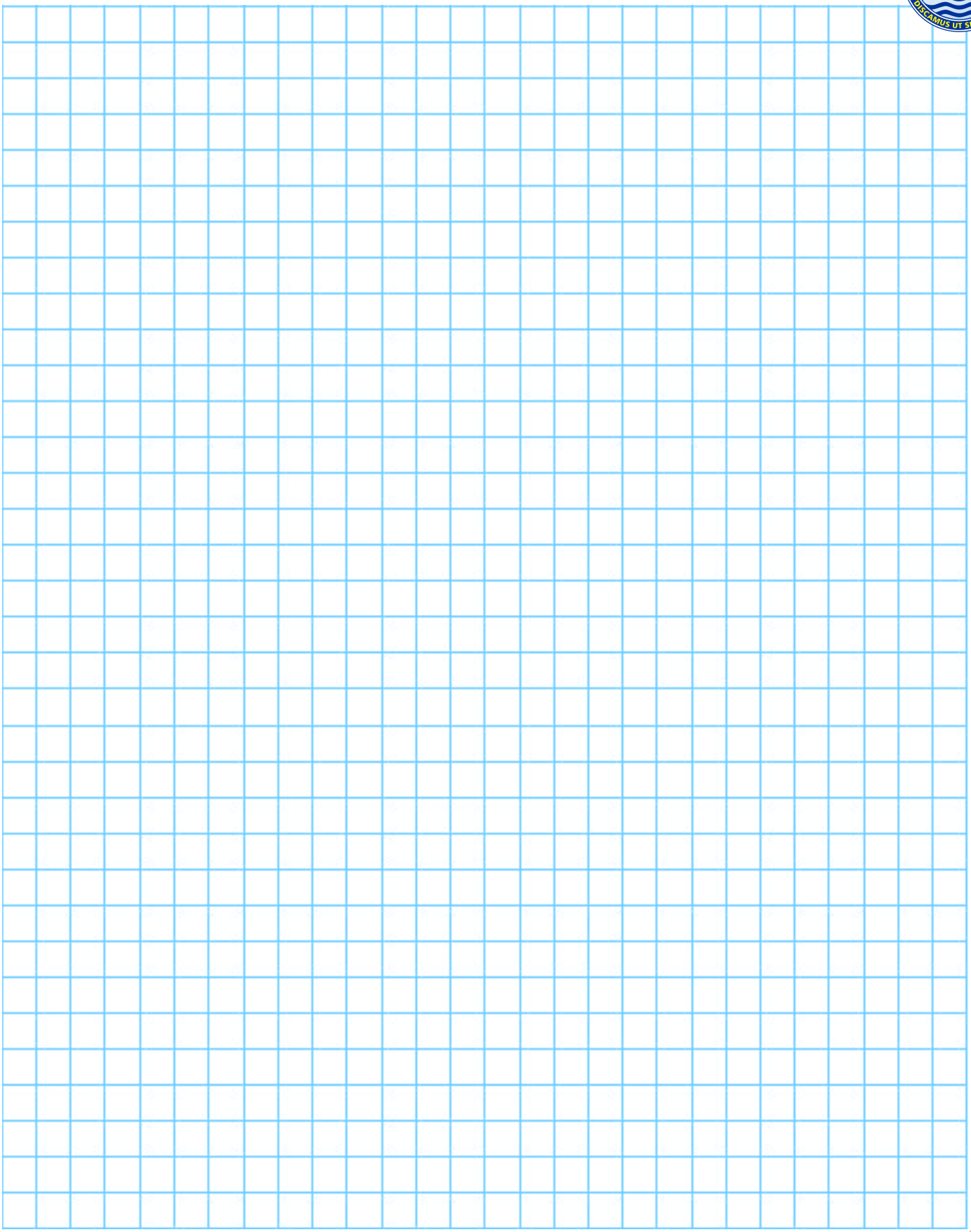
Additional working out space:



HOMEWORK 7: NUMERACY

Recall and Recap

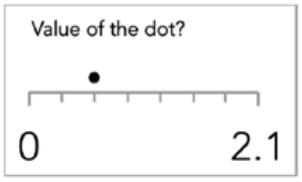
MENTAL STRATEGIES - do these in your head

Q	Question	Answer
1	□ + 7 = 10	
2	What is double 9?	
3	Halve 40	
4	111 + 30	
5	66 + 63	
6	17 + 9 = 17 + 3 + □	
7	3 + 468	
8	33 + 70 = 30 + 70 + □	
9	Double 58	
10	What is half of 7?	
	Total out of 10	

TIMESTABLES – do these in your head

Q	Question	Answer
1	6 × 2 = □	
2	36 ÷ 6 = □	
3	5 × □ = 15	
4	56 ÷ □ = 7	
5	3 × 9 = □	
6	5 ÷ 5 = □	
7	□ × 9 = 9	
8	□ ÷ 6 = 3	
9	8 × 3 = □	
10	18 ÷ 3 = □	
Total out of 10		

KEY SKILLS – you may use written calculations for these questions

Q	Question	Answer
1	What is 125% of £150?	
2	1710 ÷ 5	
3	85 – 15 ÷ 5	
4	28.82 ÷ 0.5	
5	71.204 × 100	
6	25 – 1.33	
7	Simplify 6/60	
8	Which is the lowest number, -4 or -3?	
9		
10	List the first 4 multiples of 11	
	Total out of 10	

Problem solving!

Apply your core skills to the challenge question below…

LOOK

N36

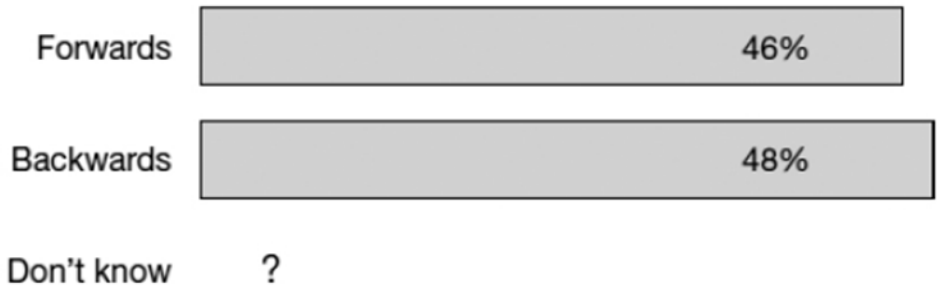
Time machine

Here is a question from a survey.

> In a time machine, would you like to go forwards or backwards in time?

People said 'Forwards', 'Backwards' or 'Don't know'.

Results:



The bar for 'Don't know' has not been drawn.

What percentage of people said 'Don't know'?

..... %

2 marks

HOMEWORK 8: SEQUENCES

Recall and Recap:

Bronze

Fill in the boxes to complete the sequence and give the rule for each:

Q1) 46, 39, 32, ☐, ☐, ☐

Q2) 44, 36, 28, ☐, ☐, ☐

Q3) 4, 10, 16, ☐, ☐, ☐

Q4) 6, 11, 16, ☐, ☐, ☐

Q5) 3, 9, 15, ☐, ☐, ☐

Q6) 42, 38, 34, ☐, ☐, ☐

Silver

Fill in the boxes to complete the sequence and give the rule for each:

Q1) 43, ☐, 35, 31, ☐

Q2) 3, ☐, 13.4, ☐, 23.8

Q3) 6, 14.2, ☐, 30.6, ☐

Q4) 39, 33.5, ☐, 22.5, ☐

Q5) 5, 9, ☐, 17, ☐

Q6) 7, ☐, 15.4, ☐, 23.8

Problem solving!

Apply your core skills to the challenge questions below...

The numbers in this sequence increase by 9 each time.

1 10 19 28 37 ...

The sequence continues in the same way.

Will 900 be in the sequence? Explain why

Yes / No

.....

.....

The numbers in this sequence increase by 4 each time.

4 8 12 16 ...

The numbers in this sequence increase by 7 each time.

7 14 21 28 ...

Both sequences continue

Write a number **greater than 100** which will be in **both** sequences

HOMEWORK 9: REAL LIFE MATHS

The following temperatures were taken in January.

Country/State	Temperature (°C)
Amsterdam	4
Cape Town	20
Hong Kong	15
Minneapolis	-21
Moscow	-17
New York	-6
Toronto	-16

1) Put the temperatures in order, from coldest to warmest.

_____ _____ _____ _____ _____ _____ _____

coldest warmest

2) How much colder is Amsterdam than Cape Town? _____

3) How much warmer is New York than Moscow? _____

4) Vancouver is 13 degrees warmer than New York. What is the temperature in Vancouver? _____

5) How much colder is Toronto than Amsterdam? _____

6) What is the difference in temperature between the warmest and coldest place? _____

7) The temperature in Detroit is 32 degrees colder than Cape Town. What is the temperature in Detroit? _____

8) Which two places have the closest temperatures? _____

9) Which place has the median temperature? _____

LOOK

N3

Captain Salamander has just returned from a round the world trip with his friend Tyger. Here are the places they visited.

From	To	Distance (km)	Distance to nearest 100 km
Washington DC	Los Angeles	3693	3700
Los Angeles	Tokyo	8807	
Tokyo	Bombay	6741	
Bombay	Athens	5173	
Athens	Paris	2096	
Paris	London	343	
London	Washington DC	5899	

1) Fill in the distance to the nearest 100 km column.

2) Put the distances in order from shortest to longest.

_____ _____ _____ _____ _____ _____ _____

shortest longest

3) How much further is the trip from Bombay to Athens than the trip from Washington DC to Los Angeles? _____ km

4) What is the total distance from Los Angeles to Tokyo to Bombay to Athens? _____ km

5) Tyger says 'The distance from Washington DC to Los Angles is more than 10 times the distance from Paris to London.' Is he right? _____

6) When arriving at Bombay, Tyger says 'So far we have travelled over 20,000 km.' Is he right?

HOMEWORK 10: NUMERACY

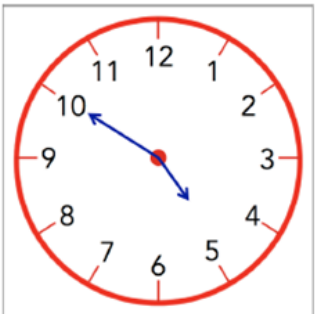
Recall and Recap

MENTAL STRATEGIES - do these in your head

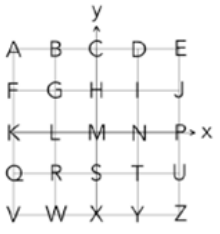
Q	Question	Answer
1	1 + □ = 20	
2	Double 54	
3	22 + 10	
4	44 – 40	
5	7 = 2 + □	
6	75 – 11 = 75 – 5 – □	
7	6 + 6 + 6 + 6 + 6 = 6 × □	
8	What is the time on the clock?	pm
9	Double 7	
10	What is half of 44?	
	Total out of 10	

TIMESTABLES – do these in your head

Q	Question	Answer
1	6 × 6 = □	
2	2 ÷ 2 = □	
3	6 × □ = 12	
4	40 ÷ □ = 5	
5	1 × 9 = □	
6	40 ÷ 8 = □	
7	□ × 7 = 49	
8	□ ÷ 3 = 1	
9	2 × 2 = □	
10	48 ÷ 6 = □	
	Total out of 10	



KEY SKILLS – you may use written calculations for these questions

Q	Question	Answer
1	What is the value of 11^2?	
2	7905 + 626	
3	(10 – 9) × 1	
4	Write 744620 in words. (Use the opposite page for your answer)	
5	0.67 ÷ 100	
6	3 × (-1)	
7	Round 1.982 to 2 d.p.	
8	(-3) + (-6)	
9	Round 0.2352 to 3 s.f.	
10	Letter at (0, 1) 	
	Total out of 10	

$5 + 4 = \bigcirc$ $\quad 7 - 4 = \star$

Now use what you've learned to find the answers to these:

(1) $\star + \star + \star =$

(2) $\star + \bigcirc + \star =$

(3) $\bigcirc + \star + \bigcirc =$

(4) $\star + 5 + \bigcirc =$

(5) $\bigcirc + \bigcirc - \bigcirc =$

(6) $\bigcirc + \star - 3 =$

(7) $4 \times \star \times \bigcirc =$

(8) $\bigcirc + \star - \bigcirc =$

(9) $4 \times \star \div \star =$

(10) $7 \times \bigcirc \div \bigcirc =$

(11) $\star + \bigcirc \times \star =$

(12) $\bigcirc + \star \times \bigcirc =$

(13) $\bigcirc \times \star - \bigcirc =$

(14) $\bigcirc + 24 \div \star =$

(15) $\bigcirc \times \star - \star =$

(16) $2 \times \bigcirc - \star =$

(17) $\star + 54 \div \bigcirc =$

(18) $\star + \star \times \bigcirc =$

(19) $\star + \star + \bigcirc \times \bigcirc =$

(20) $\bigcirc \times \bigcirc + \star \times \star =$

HOMEWORK 11: SUBSTITUTION

Recall and Recap:

substitution (positive numbers)

examples

Given $y = 3$, evaluate:

$2y + 5$

$= 2 \times 3 + 5$
$= 6 + 5$
$= 11$

$2y^3$

$= 2 \times 3^3$
$= 2 \times 27$
$= 54$

$\frac{4(y + 1)}{10}$

$= \frac{4 \times (3 + 1)}{10}$

$= \frac{16}{10} = 1.6$

exercise 6j

1. Given that $a = 3$, evaluate:

a) $10a$ e) $4a + 2$ i) $5(a - 1)$

b) a^2 f) $9(a - 1)$ j) a^3

LOOK

G20

Question 2: If f = 5 g = 6 h = 4 and i = 2
Find the value of each expression.

(a) fg (b) hi (c) fgh (d) i^3

(e) $\sqrt{h}$ (f) 3f + 2g (g) 5h + 7i (h) 9h – 7i

Problem solving!

Apply your core skills to the challenge questions below...

LOOK

G8, G20

Mrs Jones is preparing the food for a party.

She uses this rule to work out how many sausage rolls to prepare

3 sausage rolls per guest plus an extra 20

How many sausage rolls should she prepare if there are 42 guests?

For the last party, Mrs Jones made 86 sausage rolls

How many guests were there at the last party?

HOMEWORK 12: MATHSWATCH

For this week's homework, your teacher will set you a task to complete on the website Mathswatch. The task will be based on the content you have learnt over the past half term in your maths lessons. You can use the space on the next page to do any working out if you need to.

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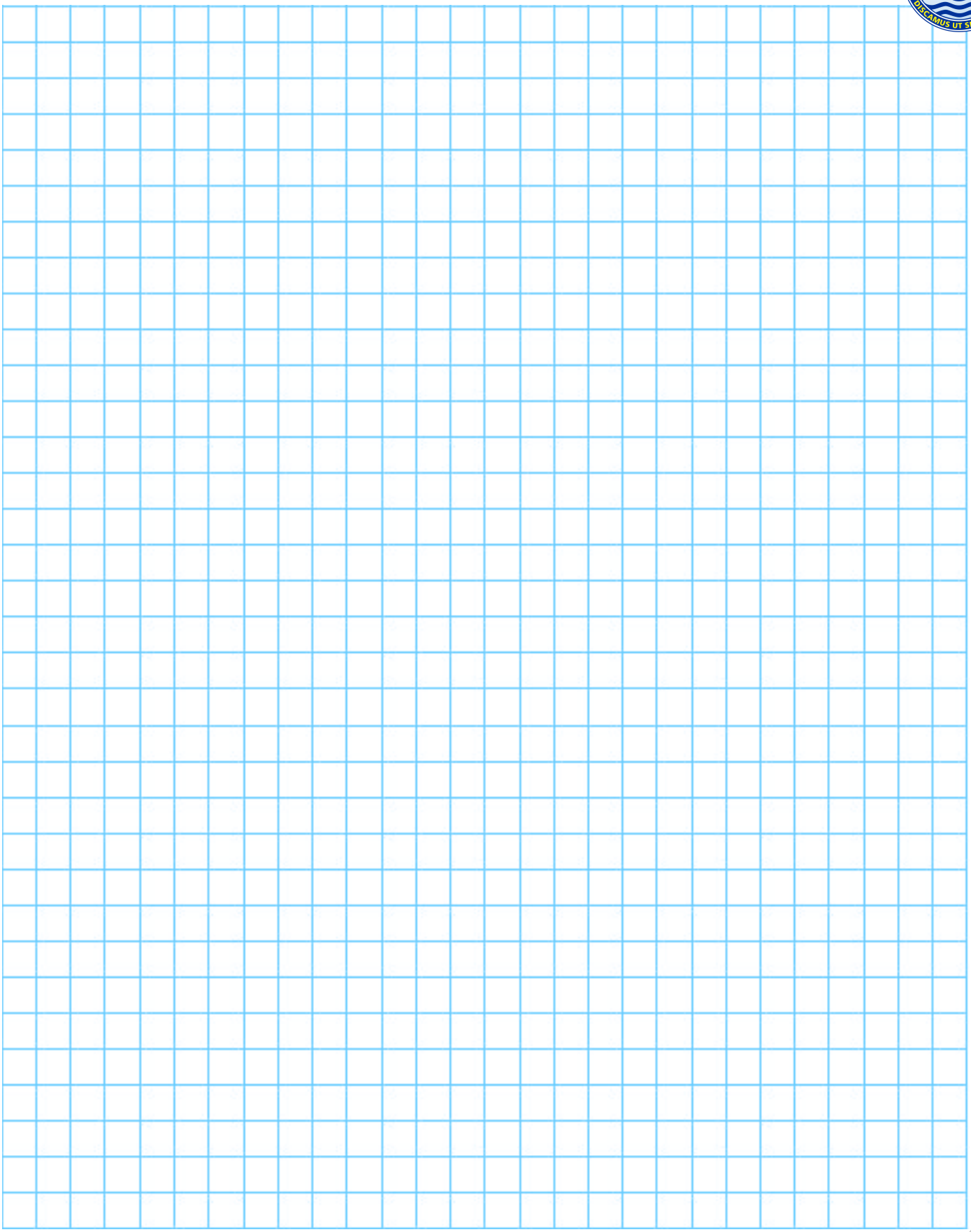

Additional working out space:

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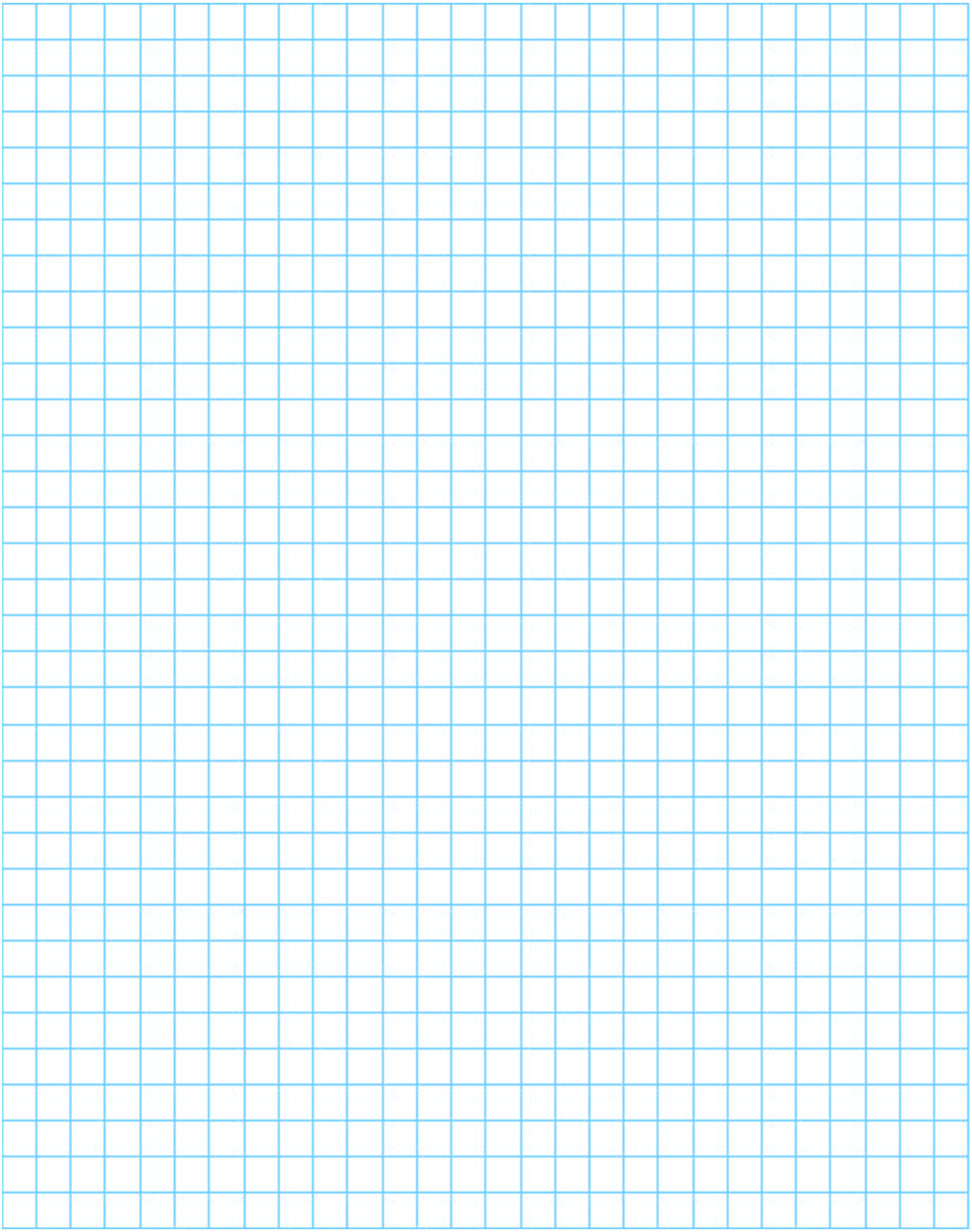

ANSWERS—WEEK 1

Q	Question	Answer
1	3 + 17	**20**
2	What is double 55?	**110**
3	112 + 10	**122**
4	29 − 10	**19**
5	6 = 1 + □	**5**
6	58 − 11 = 58 − 8 − □	**3**
7	73 + 73 = □ × 73	**2**
8	Draw hands on the clock face showing 10:10 am	**See clock above**
9	7 + 3	**10**
10	□ + 46 = 100	**54**

Q	Question	Answer
1	6 × 7 = □	**42**
2	24 ÷ 4 = □	**6**
3	4 × □ = 28	**7**
4	24 ÷ □ = 4	**6**
5	7 × 6 = □	**42**
6	18 ÷ 6 = □	**3**
7	□ × 4 = 4	**1**
8	□ ÷ 2 = 3	**6**
9	5 × 7 = □	**35**
10	54 ÷ 6 = □	**9**

Q	Question	Answer
1	481 + 1429	**1910**
2	$(9 - 5)^2 + 3 \times 4$	**28**
3	Write One Thousand and Thirty Two in digits	**1032**
4	0.35 ÷ 100	**0.0035**
5	(−6) × (−10)	**60**
6	Round 81.4358 to 2 d.p.	**81.44**
7	(−5) + (−5)	**−10**
8	Round 21 to 2 s.f.	**21**
9	Letter at (0, −1)	**S**
10	1/4 = 3/□	**12**

★	★★	★★★
A1 35	B1 16560	C1 513.646
A2 5	B2 76	C2 9.5
A3 2	B3 5028	C3 759.766
A4 4	B4 6931	C4 393.0672
A5 15	B5 13533	C5 898.314
A6 1	B6 77	C6 5.4
A7 8	B7 418	C7 0.7
A8 11	B8 75081	C8 73.438
A9 24	B9 12024	C9 1.3326
A10 3	B10 35025	C10 556.9

6 1

11 1 (U1)

[2]

ANSWERS—WEEK 2

Bronze	Silver	Gold
Q1) 6	Q1) 4	Q1) 5
Q2) 9	Q2) 4	Q2) 3
Q3) 3	Q3) 8	Q3) 1
Q4) six hundred	Q4) nine thousand	Q4) 6
Q5) thirty	Q5) 5	Q5) 5
Q6) 8	Q6) seven hundred	Q6) 6

Write down these numbers in standard form.

1)	8 thousands + 7 hundreds + 4 tens + 5 ones	=	8,745
2)	5 thousands + 2 hundreds + 9 tens + 3 ones	=	5,293
3)	4 ten thousands + 7 thousands + 3 hundreds	=	47,300
4)	2 ten thousands + 8 hundreds + 5 tens + 9 ones	=	20,859
5)	7 ten thousands + 2 thousands + 8 tens + 2 ones	=	72,082

Work out these missing conversion facts

1)	5 hundreds = 500 ones	2)	60 ones = 6 tens
3)	7 thousands = 70 hundreds	4)	30 tens = 3 hundreds
5)	60 ones = 6 tens	6)	3 thousands = 30 hundreds
7)	50 hundreds = 5 thousands	8)	1 thousand = 1000 ones
9)	8 hundreds = 800 ones	10)	40 ones = 4 tens
11)	4 thousands = 400 tens	12)	80 hundreds = 8 thousands
13)	30 tens = 300 ones	14)	4 hundreds = 400 ones
15)	70 tens = 7 hundreds	16)	5 hundreds = 50 tens
17)	60 tens = 6 hundreds	18)	4000 ones = 4 thousands
19)	50 tens = 500 ones	20)	4000 ones = 40 hundreds
21)	2 thousands = 200 tens	22)	90 hundreds = 9 thousands

PUZZLE TIME – find the answer to the riddle below in the table!

- I am worth more than 30 hundreds.
- I am less than 7000 ones.
- My tens digit is greater than my ones.
- I am a multiple of 5.
- Who am I?

3726	5290	6423
7185	4428	5925

ANSWERS—WEEK 4

Q	Question	Answer
1	□ + 3 = 5	2
2	68 + □ = 100	32
3	What is half of 4?	2
4	189 − 10	179
5	161 + □ = 240	79
6	74 = 24 + □	50
7	629 − 627	2
8	9 × 5 = 45, so 45 ÷ 9 = □	5
9	Write 8:23 am in 24 hour clock format	08:23
10	2:15 pm is how many minutes after 2:05 pm?	10

Q	Question	Answer
1	5 × 1 = □	5
2	24 ÷ 8 = □	3
3	5 × □ = 30	6
4	45 ÷ □ = 9	5
5	6 × 1 = □	6
6	40 ÷ 4 = □	10
7	□ × 1 = 10	10
8	□ ÷ 3 = 9	27
9	6 × 4 = □	24
10	2 ÷ 2 = □	1

Q	Question	Answer
1	What is 4/6 of 30?	20
2	3 × 911	2733
3	16071 − 8966	7105
4	6.9 × 5.85	40.365
5	8/10 as a decimal number	0.8
6	23.8 + 0.55	24.35
7	(−18) ÷ 9	−2
8	If a = 6 b = 8 and c = 4, what is the value of $(2b/c)^2$	16
9	(−1) − (−3)	2
10	Is 1 a factor of 3?	Yes

3. Completes both multiplication grids correctly, ie

×	8	–5
9	72	–45
–6	–48	30

-

×	0.2	0.4
3	0.6	1.2
15	3	6

3

or Completes one of the grids correctly and makes not more than one error or omission in the other grid

2

or Completes one of the grids correctly

or

Makes not more than one error or omission in each grid

1

! ***For 2m or 1m, follow through***

For the first grid, accept follow through only from their –5 but note that their –5 must be negative eg

•

×	8	–6 (error but negative)
9	72	–54
–6	–48	30

follow through

For the second grid, accept follow through only from their 15

×	0.2	0.4
3	0.6	1.2
10 (error)	2	6

follow through

[3]

ANSWERS—WEEK 5

Averages and Range

Find the range of

(a) 9, 12, 6, 14, 11, 7

(b) 5, 3, 9, -4, 2, 1

(c) 1, 0, 1, 1, 0, 0, 1

Find the mode of

(a) 9, 5, 6, 1, 6, 3, 2

(b) 5, 2, 5, 3, 5, 4, 3, 3

(c) 3, 7, 5, 9, 12

Find the median of

(a) 8, 12, 11, 15, 9

(b) 6, 1, 9, 8, 11

(c) 19, 2, 14, 8, 11, 10, 4, 15

Find the mean of

(a) 13, 4, 7

(b) 4, 10, 15, 8, 5

(c) 5, -2, 0, 8, 3

(a) 8
(b) 13
(c) 1

(a) 6
(b) 3 and 5
(c) No mode

(a) 11
(b) 8
(c) 10·5

(a) 8
(b) 8·4
(c) 2·8

True or False?

Averages and Range

For each statement, circle the correct response.

1	4, 2, 8, 3, 9	The range is 5	True	False
2	5, 7, 8, 11, 12	The median is 8	True	False
3	9, 6, 6, 3, 4	The mode is 6	True	False
4	10, 1, 9, 4	The mean is 6	True	False
5	5, 6, 6, 8, 8, 9	The median is 6 and 8	True	False
6	1, 2, 3, 5, 6, 9	The median is 4	True	False
7	2, 3, 4	The mean, mode and median are all 3	True	False
8	5, 8, 2, 6, 3	There is no mode	True	False
9	8, 11, 6, 4, 6	The mean and the range are the same	True	False

ANSWERS—WEEK 7

Q	Question	Answer
1	□ + 7 = 10	**3**
2	What is double 9?	**18**
3	Halve 40	**20**
4	111 + 30	**141**
5	66 + 63	**129**
6	17 + 9 = 17 + 3 + □	**6**
7	3 + 468	**471**
8	33 + 70 = 30 + 70 + □	**3**
9	Double 58	**116**
10	What is half of 7?	**3.5**

Q	Question	Answer
1	6 × 2 = □	**12**
2	36 ÷ 6 = □	**6**
3	5 × □ = 15	**3**
4	56 ÷ □ = 7	**8**
5	3 × 9 = □	**27**
6	5 ÷ 5 = □	**1**
7	□ × 9 = 9	**1**
8	□ ÷ 6 = 3	**18**
9	8 × 3 = □	**24**
10	18 ÷ 3 = □	**6**

Q	Question	Answer
1	What is 125% of £150?	**£187.50**
2	1710 ÷ 5	**342**
3	85 − 15 ÷ 5	**82**
4	28.82 ÷ 0.5	**57.64**
5	71.204 × 100	**7120.4**
6	25 − 1.33	**23.67**
7	Simplify 6/60	**1/10**
8	Which is the lowest number, −4 or −3?	**−4**
9	See number line	**0.6**
10	List the first 4 multiples of 11	**11, 22, 33, 44**

4.	6	
	or Shows the value 94 or the values 4 and 2	
	or	
	Shows a complete correct method with not more than one computational error	

eg

- $100 - 46 - 48$
- $100 - (46 + 48)$
- $100 - 46 = 53$ *(error)*

$53 - 48 = 5$

Do not accept for 1m, necessary brackets omitted

eg

- *$100 - 46 + 48$*

ANSWERS—WEEK 8

Bronze

Q1) 25, 18, 11
Rule: Subtract 7

Q2) 20, 12, 4
Rule: Subtract 8

Q3) 22, 28, 34
Rule: Add 6

Q4) 21, 26, 31
Rule: Add 5

Q5) 21, 27, 33
Rule: Add 6

Q6) 30, 26, 22
Rule: Subtract 4

Silver

Q1) 39, 27
Rule: Subtract 4

Q2) 8.2, 18.6
Rule: Add 5.2

Q3) 22.4, 38.8
Rule: Add 8.2

Q4) 28, 17
Rule: Subtract 5.5

Q5) 13, 21
Rule: Add 4

Q6) 11.2, 19.6
Rule: Add 4.2

Will 900 be in the sequence? Explain why

Yes / (No)

Each number in the sequence is one more than the multiples of 9. Therefore no multiple of 9 is in the sequence.

The numbers in this sequence increase by 4 each time.

4 8 12 16 ...

The numbers in this sequence increase by 7 each time.

7 14 21 28 ...

Both sequences continue

Write a number **greater than 100** which will be in **both** sequences

28 56 84 112

Captain Salamander has just returned from a round the world trip with his friend Tyger. Here are the places they visited.

From	To	Distance (km)	Distance to nearest 100 km
Washington DC	Los Angeles	3693	3700
Los Angeles	Tokyo	8807	8800
Tokyo	Bombay	6741	6700
Bombay	Athens	5173	5200
Athens	Paris	2096	2100
Paris	London	343	300
London	Washington DC	5899	5900

1) Fill in the distance to the nearest 100 km column.

2) Put the distances in order from shortest to longest.

343 _____ 2096 _____ 3693 _____ 5173 _____ 5899 _____ 6741 _____ 8807 _____

shortest longest

3) How much further is the trip from Bombay to Athens than the trip from Washington DC to Los Angeles? 1480 km

4) What is the total distance from Los Angeles to Tokyo to Bombay to Athens? 15548 km

5) Tyger says 'The distance from Washington DC to Los Angles is more than 10 times the distance from Paris to London.' Is he right? no

343 x 10 =3430

6) When arriving at Bombay, Tyger says 'So far we have travelled over 20,000 km.' Is he right?

3693 + 8807 + 6741 = 19241 no

The following temperatures were taken in January.

Country/State	Temperature (°C)
Amsterdam	4
Cape Town	20
Hong Kong	15
Minneapolis	-21
Moscow	-17
New York	-6
Toronto	-16

1) Put the temperatures in order, from coldest to warmest.

-21 _____ -17 _____ -16 _____ -6 _____ -4 _____ -15 _____ -20 _____

coldest warmest

2) How much colder is Amsterdam than Cape Town? 16° colder

3) How much warmer is New York than Moscow? 11° warmer

4) Vancouver is 13 degrees warmer than New York. What is the temperature in Vancouver? 7°

5) How much colder is Toronto than Amsterdam? 20° colder

6) What is the difference in temperature between the warmest and coldest place? 41°

7) The temperature in Detroit is 32 degrees colder than Cape Town. What is the temperature in Detroit? -12°

8) Which two places have the closest temperatures? Minneapolis and Moscow

9) Which place has the median temperature? New York

ANSWERS—WEEK 10

Q	Question	Answer
1	$1 + \square = 20$	**19**
2	Double 54	**108**
3	22 + 10	**32**
4	44 − 40	**4**
5	$7 = 2 + \square$	**5**
6	$75 - 11 = 75 - 5 - \square$	**6**
7	$6 + 6 + 6 + 6 + 6 = 6 \times \square$	**5**
8	What is the time on the clock?	**4:50 pm**
9	Double 7	**14**
10	What is half of 44?	**22**

Q	Question	Answer
1	$6 \times 6 = \square$	**36**
2	$2 \div 2 = \square$	**1**
3	$6 \times \square = 12$	**2**
4	$40 \div \square = 5$	**8**
5	$1 \times 9 = \square$	**9**
6	$40 \div 8 = \square$	**5**
7	$\square \times 7 = 49$	**7**
8	$\square \div 3 = 1$	**3**
9	$2 \times 2 = \square$	**4**
10	$48 \div 6 = \square$	**8**

Q	Question	Answer
1	What is the value of 11^2?	**121**
2	7905 + 626	**8531**
3	(10 − 9) × 1	**1**
4	Write 744620 in words. (Use the opposite page for your answer)	**Seven Hundred and Forty Four Thousand, Six Hundred and Twenty**
5	0.67 ÷ 100	**0.0067**
6	3 × (−1)	**−3**
7	Round 1.982 to 2 d.p.	**1.98**
8	(−3) + (−6)	**−9**
9	Round 0.2352 to 3 s.f.	**0.235**
10	Letter at (0, 1)	**H**

$5 + 4 = \square$ $\qquad$ $7 - 4 = \star$

Now use what you've learned to find the answers to these:

(1) $\star + \star + \star = 9$

(2) $\star + \square + \star = 15$

(3) $\square + \star + \square = 21$

(4) $\star + 5 + \square = 17$

(5) $\square + \square - \square = 9$

(6) $\square + \star - 3 = 9$

(7) $4 \times \star \times \square = 108$

(8) $\square + \star - \square = 3$

(9) $4 \times \star \div \star = 4$

(10) $7 \times \square \div \square = 7$

(11) $\star + \square \times \star = 30$

(12) $\square + \star \times \square = 30$

(13) $\square \times \star - \square = 18$

(14) $\square + 24 \div \star = 17$

(15) $\square \times \star - \star = 24$

(16) $2 \times \square - \star = 15$

(17) $\star + 54 \div \square = 9$

(18) $\star + \star \times \square = 36$

(19) $\star + \star + \square \times \square = 87$

(20) $\square \times \square + \star \times \star = 90$

ANSWERS—WEEK 11

exercise 6j

1. Given that $a = 3$, evaluate:

a) $10a$ 30 e) $4a + 2$ 14 i) $5(a - 1)$ 10

b) a^2 9 f) $9(a - 1)$ 18 j) a^3 27

Question 2:

(a) 30 (b) 8 (c) 120 (d) 8

(e) 2 (f) 27 (g) 34 (h) 22

Mrs Jones is preparing the food for a party.

She uses this rule to work out how many sausage rolls to prepare

3 sausage rolls per guest plus an extra 20

How many sausage rolls should she prepare if there are 42 guests?

$42 \times 3 = 126$

$126 + 20 = 146$

146

For the last party, Mrs Jones made 86 sausage rolls

How many guests were there at the last party?

$86 - 20 = 66$

$66 \div 3 = 22$

22

EXTRA SUPPORT

If you need help with completing your homework, please use the Mathswatch clips in the LOOK boxes first. If you are still stuck, speak to your class teacher.

If you need to contact the Head of Maths regarding any worries or concerns, you can contact Miss Pankhurst at:

j.pankhurst@benjaminbritten.school

RESOURCES PROVIDED BY:

Numeracy Ninjas
Mr Carter Maths
Miss B's Resources
NRich
Worksheet Works
10Ticks