Benjamin Britten Academy of Music and Mathematics

MATHEMATICS HOMEWORK BOOKLET

Year 7 Book B

SPRING TERM

NAME:

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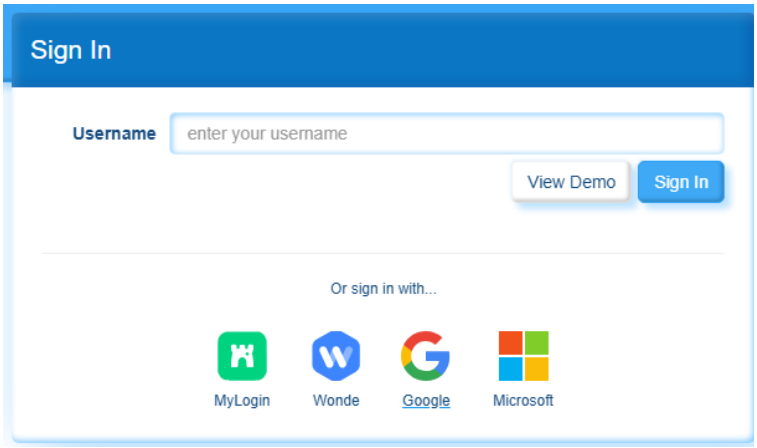
Mathswatch Log in details:

To log into mathswatch, please click the google button and type in your school email address and your password.



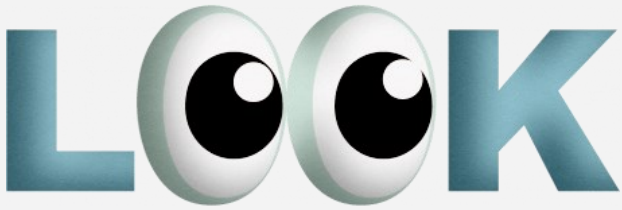
username example (school email): 25bloggsj@benjaminbritten.school
Password example (school password): BlueCat123.

Completing your homework

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

There are **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

×	2	8	4	12	7	11	9	3	6	5	10
3											
6											
8											
4											
10											
11											
9											
5											
7											
12											
2											

ten times larger: multiplying by 10, 100, 1000...

examples

34 × 100 = 3400	10 × 5.902 = 59.02	0.84 × 1000 = 840

1. True or False: 3.5 × 10 = 3.50

2. Calculate:

a) 64 × 100

b) 358 × 1000

c) 49 × 10

d) 500 × 1000

e) 2.6 × 10

f) 0.35 × 10

g) 3.5 × 100

h) 0.89 × 1000

i) 0.054 × 10

j) 123.89 × 1000

k) 0.8 × 1000

l) 0.904 × 10,000

multiplying decimals

each number is 10 times smaller...

...so the answer is 100 times smaller

example

Given that 6 × 7 = 42, calculate 0.6 × 0.7 = 0.42

1. Complete each table of related calculations:

a)

3 × 4 = 12
3 × 0.4 = _____
3 × 0.04 = _____
0.3 × 4 = _____

b)

5 × 3 = _____
0.5 × 3 = _____
0.5 × 0.3 = _____
5 × 0.03 = _____

c)

12 × 2 = _____
1.2 × 2 = _____
0.12 × 2 = _____
1.2 × 0.2 = _____

d)

6 × 3 = _____
0.06 × 3 = _____
0.6 × 0.3 = _____
60 × 3 = _____

e)

12 × 6 = 72
120 × 6 = _____
1.2 × 6 = _____
1.2 × 0.6 = _____

f)

14 × 1 = _____
1.4 × 1 = _____
14 × 0.1 = _____
14 × 0.01 = _____

0.4 × 5 =

3 × 0.6 =

0.2 × 7 =

11 × 0.08 =

0.02 × 6 =

0.1 × 8 =

2.5 × 6 =

9 × 0.9 =

4.5 × 2 =

0.25 × 3 =

HW 1

HOMEWORK 2: PLACE VALUE

LOOK
N1

Write each of these numbers in digits. Be careful - they are all different!

A Four thousand, two hundred 4, 200	**B** Forty thousand, two hundred	**C** Four hundred and two thousand	**D** Four hundred thousand and twenty
E Four thousand and twenty	**F** Forty thousand and twenty	**G** Four hundred thousand and two	**H** Four thousand and two
I Forty-two thousand	**J** Four hundred thousand, two hundred	**K** Forty thousand and two	**L** Four hundred and twenty thousand

What is the value of the...

3	9435771	
6	1826008	
4	7056247	
2	9012018	

5	4159324	
5	2540931	
7	5136047	
9	9670123	

What is the value of the...

3	0.3	
6	0.06	
1	4.21	
5	9.54	
2	145.2	

6	436.5	
9	5183.09	
4	145078.2	
8	8000657	
3	7364287	

Reading & Writing integers

Match the words on the left with their partners on the right. Record your matching pairs in the table below.

A Four Thousand and Eighty Two	G Eighty Two Thousand and Four
B Four Hundred and Eight Thousand	H Eight Hundred and Four Thousand
C Forty Eight Thousand and Two	I Forty Thousand, Eight Hundred
D Fourteen thousand, eight hundred and twenty	J Eight Thousand and Forty
E Four Hundred Thousand and Eighty	K Eighteen Thousand and Four
F Forty Thousand and Eight	L Eight Hundred and Forty Thousand, Eight Hundred

M 48,002	N 408,000
O 8,040	P 400,080
Q 40,800	R 4,082
S 840,800	T 40,008
U 804,000	V 82,004
W 14,820	X 18,004

A	B	C	D	E	F	G	H	I	J	K	L

Guess My Number ★ extra challenge

Use the clues to work out my number and record it in the spaces at the bottom

My number has the same number of tens and tenths

My number has a 0 in the hundreds column and a 1 in the hundredths column

My number has 9 digits and a decimal point

My number contains the digit 4 twice, but no other repeats

My number is less than 1 million but more than half a million

My number has a 7 in the thousands column

The digit 3 is next to the decimal point.

My number does not contain the digits 2 or 6

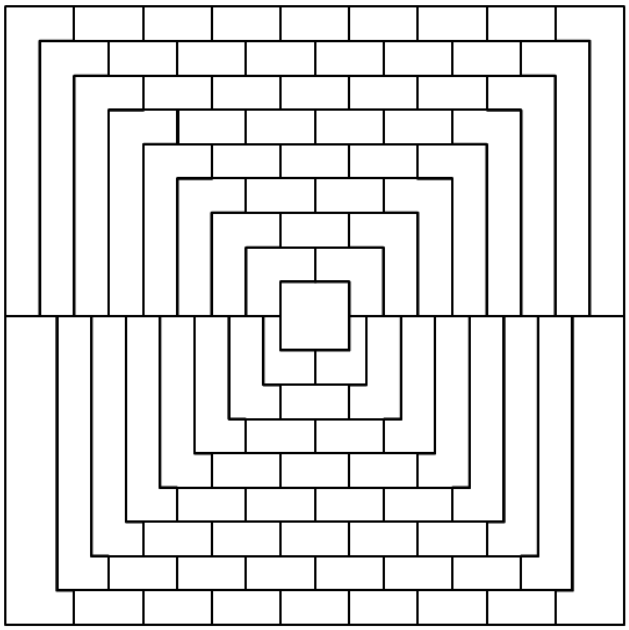
8 is next to 9 and 8 is on the left of 9

_ _ _ _ _ _ _ _ _ _

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.



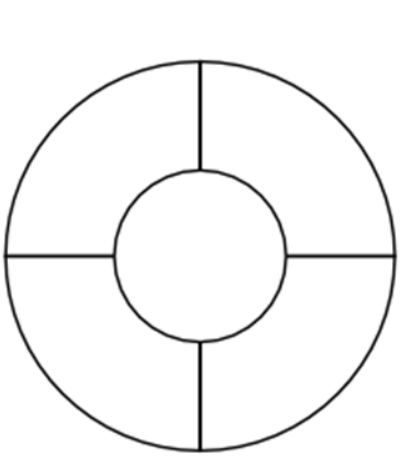
What is the least number of different colours that are needed?

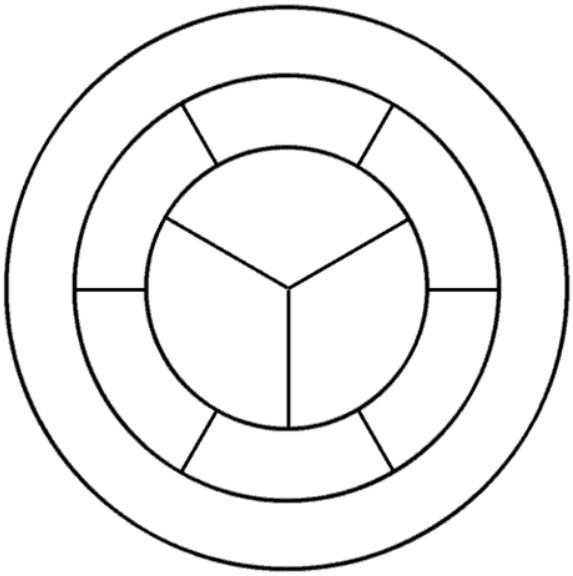
Part B

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

×	7	2	12	4	6	8	11	3	5	9	10
4											
7											
12											
2											
5											
8											
11											
9											
3											
6											
10											

written calculations: short division

learn by heart

Fraction Bar: *the line in a fraction - it means divide*

$\frac{3}{5}$ ...this means 3 ÷ 5

examples

Write $\frac{1}{8}$ as a decimal.

$$8\overline{)1.^{1}0^{2}0^{4}0} = 0.125$$

1 ÷ 8 = 0.125

Calculate half of 0.87

$$2\overline{)0.8\,7^{1}0} = 0.435$$

= 0.435

Which number is half way between 35 and 82?

(35 + 82) ÷ 2
= 117 ÷ 2 = 58.5

LOOK

N15, N16, A10,

Work out

1) $434 \div 7 =$ 2) $756 \div 9 =$ 3) $546 \div 7 =$

4) $279 \div 3 =$ 5) $440 \div 8 =$ 6) $148 \div 4 =$

7) $102 \div 2 =$ 8) $144 \div 9 =$ 9) $448 \div 8 =$

10) $91 \div 7 =$ 11) $640 \div 8 =$ 12) $390 \div 6 =$

Work out:

a) $448 \div 8$ b) $211 \div 5$ c) $941 \div 5$

d) $218 \div 5$ e) $4.5 \div 4$ f) $0.0171 \div 3$

HOMEWORK 5: SUBSTITUTION

LOOK
A10

examples

Given $y = 3$, evaluate:

$y + 7$	$2y + 5$	$2(y + 5)$
$= 3 + 7$ $= 10$	$= 2 \times 3 + 5$ $= 6 + 5$ $= 11$	$= 2 \times (3 + 5)$ $= 2 \times 8$ $= 16$

Given that $a = 3$, evaluate:

a) $10a$

b) a^2

c) $\frac{a}{3}$

d) $5a - 1$

e) $4a + 2$

f) $7 + a$

g) $7a$

h) $2a + 5$

i) $5 - a$

j) a^3

k) $4 + 2a$

l) $3a - 2$

$5 + 4 =$ ◯ $\quad\quad$ $7 - 4 =$ ☆

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

(1) ☆ + ☆ + ☆ =

(2) ☆ + ◯ + ☆ =

(3) ◯ + ☆ + ◯ =

(4) ☆ + 5 + ◯ =

(5) ◯ + ◯ − ◯ =

(6) ◯ + ☆ − 3 =

(7) 4 × ☆ × ◯ =

(8) ◯ + ☆ − ◯ =

(9) 4 × ☆ ÷ ☆ =

(10) 7 × ◯ ÷ ◯ =

(11) ☆ + ◯ × ☆ =

(12) ◯ + ☆ × ◯ =

(13) ◯ × ☆ − ◯ =

(14) ◯ + 24 ÷ ☆ =

(15) ◯ × ☆ − ☆ =

(16) 2 × ◯ − ☆ =

(17) ☆ + 54 ÷ ◯ =

(18) ☆ + ☆ × ◯ =

(19) ☆ + ☆ + ◯ × ◯ =

(20) ◯ × ◯ + ☆ × ☆ =

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.

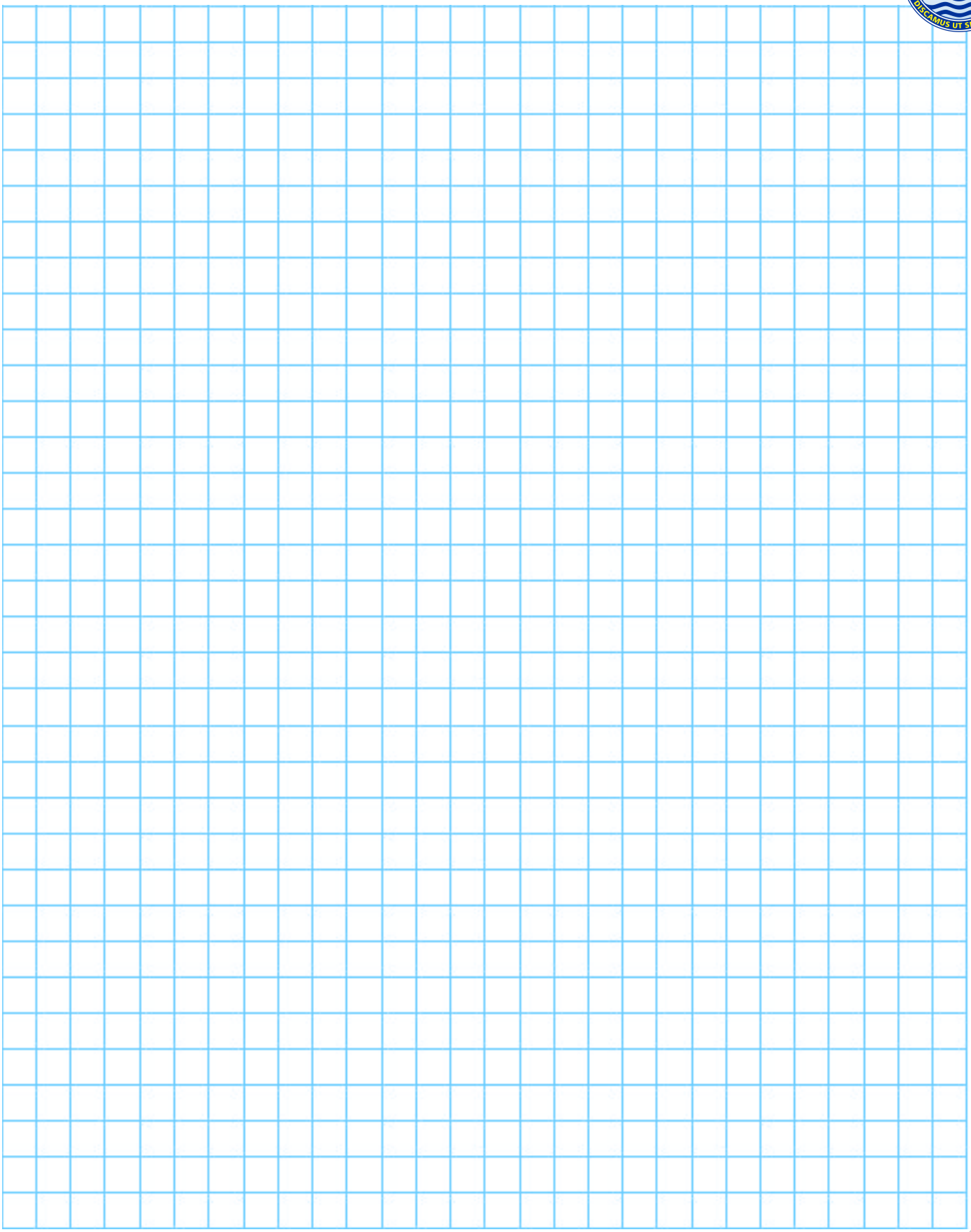
If you have any issues logging in, you must speak to your class teacher as soon as possible.

Username— firstnamelastname@benjamin

Password— your DOB (format: monthDYYYY)

If you need a printed copy of this homework task, make sure you speak to your class teacher before the due date and they will print a copy for you to complete.

Additional working out space:



HOMEWORK 7: NUMERACY

×	10	7	12	9	4	11	6	3	8	2	5
6											
9											
11											
8											
2											
7											
10											
12											
4											
5											
3											

multiplying integers (related calculations)

example

Given that 34 × 7 = 238, calculate 340 × 70

= 23,800

Each number became 10 times larger, so the answer became 100 times larger

1. Calculate:

a)

6 × 4 = 24
6 × 400 = _____
60 × 4 = _____
60 × 40 = _____

b)

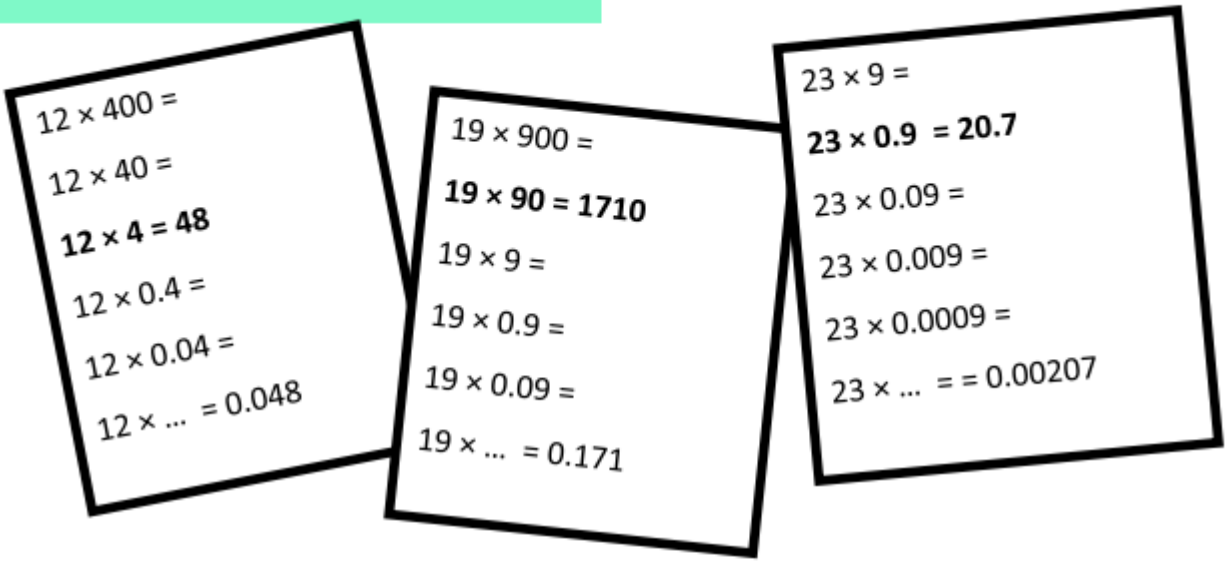
9 × 2 = 18
9000 × 2 = _____
9 × 200 = _____
90 × 20 = _____

c)

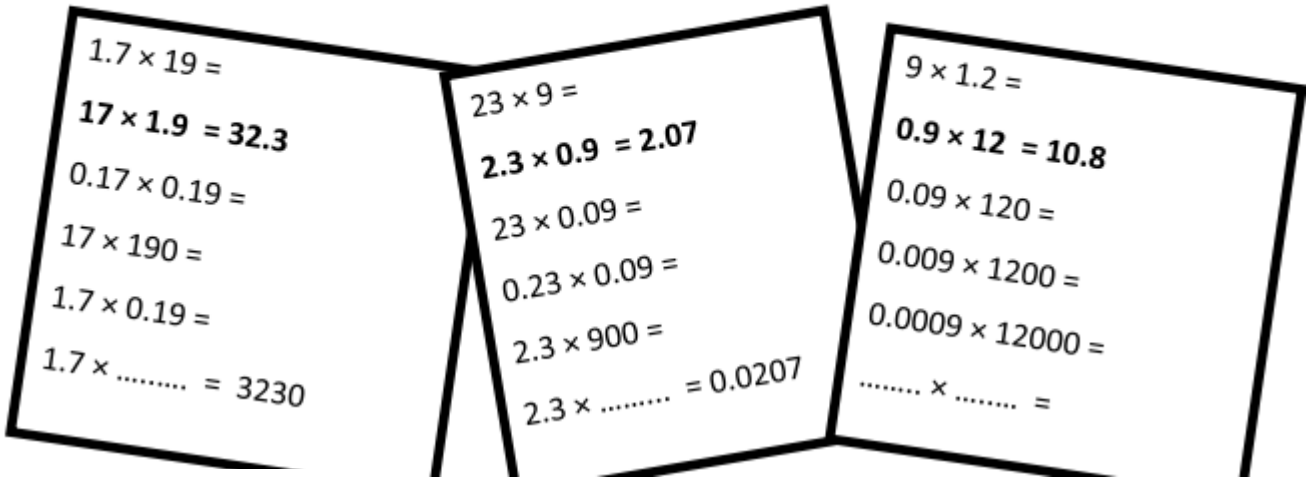
5 × 3 = _____
50 × 3 = _____
5 × 3000 = _____
5000 × 3 = _____

related calculations

Can you use one calculation to work out the answer to another?



careful! both numbers are changing here:



challenge

1. 6 × 7 =
2. 0.6 × 7 =
3. 3 × 4 =
4. 0.3 × 0.4 =
5. 8 × 9 =
6. 80 × 0.09 =
7. 4 × 4 =
8. 400 × 400 =

more

A. 0.9 × 0.3 =
B. 80 × 0.06 =
C. 300 × 0.4 =
D. 25 × 0.06 =
E. 34 × 0.08 =

HOMEWORK 8: SEQUENCES

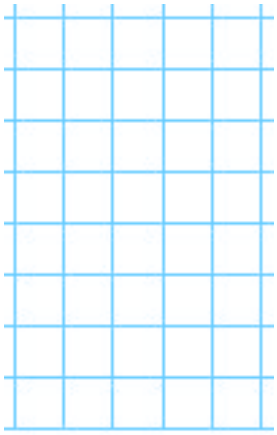
arithmetic sequences

Work out what is happening in the sequences.
Can you figure out the missing terms?

A	7	12	17	22		
B	5	8	11	14		
C	16	13	10	7		
D	15	9	3	-3		
E	22	14	6			
F	9		15		21	
G	-3		5		13	

Think hard...

(a) Is 205 a term in the sequence 1, 5, 9, 13, ... ?
(b) Is 200 a term in the sequence 4, 10, 16, 22, ... ?
(c) Is 1000 a term in the sequence 50, 65, 80, 95, ... ?
(d) Is 999 a term in the sequence 11, 20, 29, 38, ... ?
(e) Is 458 a term in the sequence 5, 12, 19, 26, ... ?



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

×	11	8	12	5	7	3	10	6	9	4	2
7											
12											
6											
10											
2											
8											
11											
9											
3											
5											
4											

Complete these multiplication grids:

a)

×	6	8	10
3			
4			
20			

b)

×	3	20	
2			60
5			
40			

c)

×	5		25
2		60	
20			
			2500

d)

×		50	100
4	8		
		350	
	180		

1) 3 x 20 =

2) 7 x 40 =

3) 9 x 60 =

4) 8 x 50 =

5) 12 x 70 =

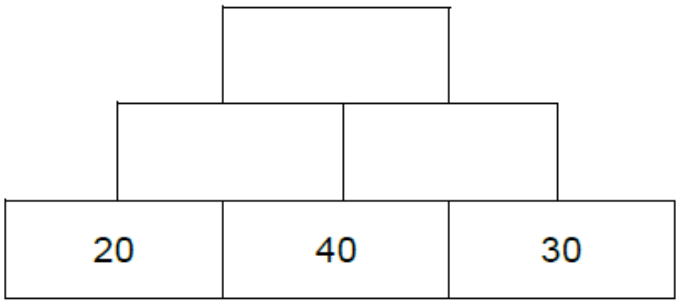
6) 6300 ÷ 70 =

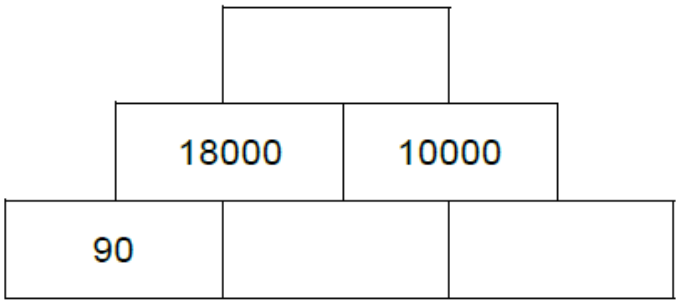
7) 3600 ÷ 60 =

8) 5600 ÷ 70 =

9) 12100 ÷ 110 =

10) 10800 ÷ 90 =





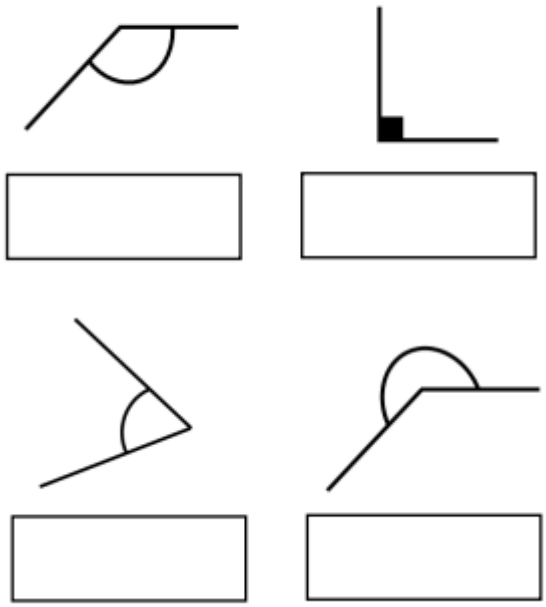
1) *A school wants to take 240 year 7 students on a school trip. The school decides to book coaches. Each coach seats 80 pupils. How many coaches should the school book ?*

2) *A large company holds a meeting for all its employees in a large conference hall. There are 2800 employees in the company. Each row seats 70 people. How many rows in the conference hall will be filled ?*

3) *A car dealer has to sell 120 Fordo cars next year. The car dealer wants to have sales of at least £960'000. What price must the car dealer sell each car for in order to make sales of at least £960'000 ?*

HOMEWORK 11: ANGLES

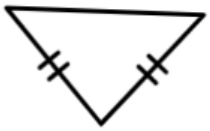
1. Label these angles as acute, right, obtuse or reflex:



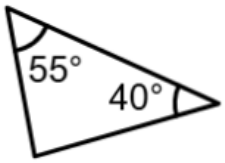
Decide whether each triangle is isosceles, scalene or equilateral:

a)

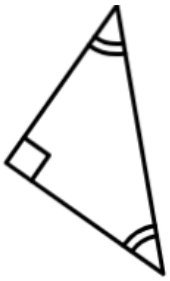
b)



c)



d)

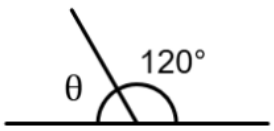


Given that angles on a straight line sum to 180°

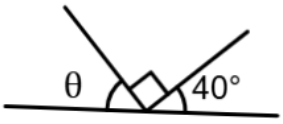
Find the missing angles below

1. Work out the size of each missing angle on these straight lines, marked θ:

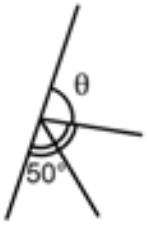
a)



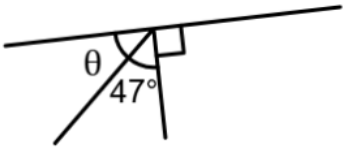
c)



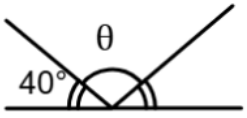
e)



b)



d)



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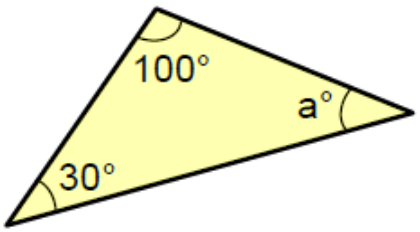
Given that angles in a triangle sum to 180^{o}

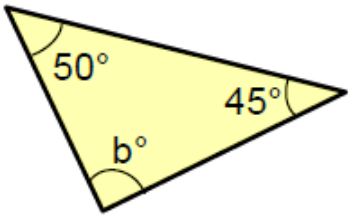
Find the missing angles below

1)



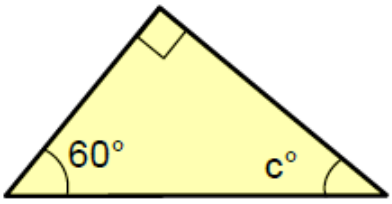
a =

2)



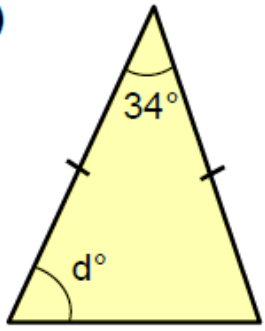
b =

3)



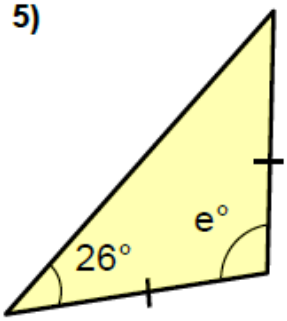
c =

4)



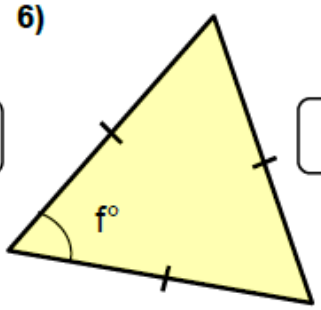
d =

5)



e =

6)



f =

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.

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

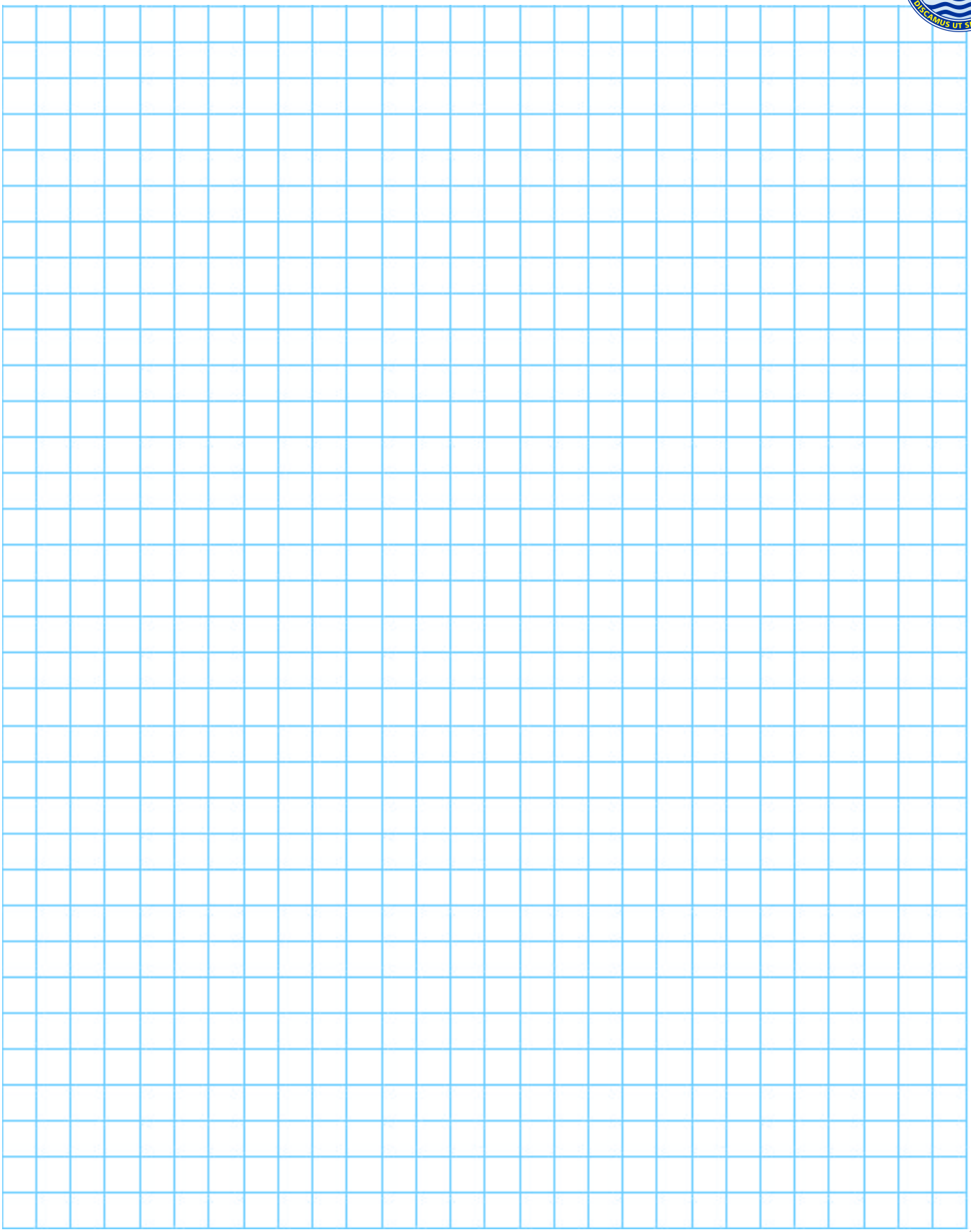
If you have any issues logging in, you must speak to your class teacher as soon as possible.

Username— firstnamelastname@benjamin

Password— your DOB (format: monthDYYYY)

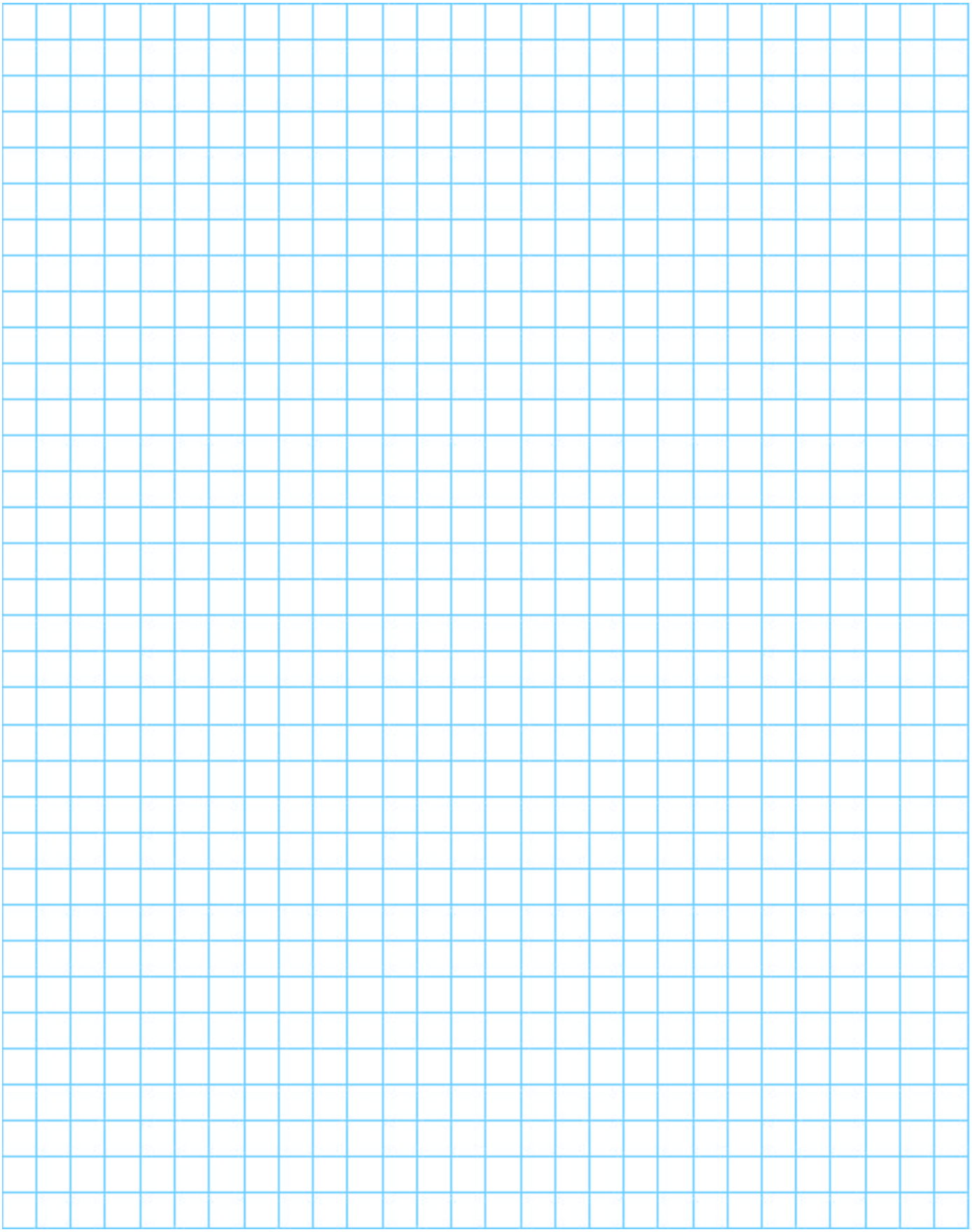
If you need a printed copy of this homework task, make sure you speak to your class teacher before the due date and they will print a copy for you to complete.

Additional working out space:



Additional working out space:

Additional working out space:



ANSWERS—WEEK 1

×	2	8	4	12	7	11	9	3	6	5	10
3	6	24	12	36	21	33	27	9	18	15	30
6	12	48	24	72	42	66	54	18	36	30	60
8	16	64	32	96	56	88	72	24	48	40	80
4	8	32	16	48	28	44	36	12	24	20	40
10	20	80	40	120	70	110	90	30	60	50	100
11	22	88	44	132	77	121	99	33	66	55	110
9	18	72	36	108	63	99	81	27	54	45	90
5	10	40	20	60	35	55	45	15	30	25	50
7	14	56	28	84	49	77	63	21	42	35	70
12	24	96	48	144	84	132	108	36	72	60	120
2	4	16	8	24	14	22	18	6	12	10	20

1. True or False: $3.5 \times 10 = 3.50$ False

2. Calculate:

a) 64×100 6,400

b) 358×1000 358,000

c) 49×10 490

d) 500×1000 500,000

e) 2.6×10 26

f) 0.35×10 3.5

g) 3.5×100 350

h) 0.89×1000 890

i) 0.054×10 0.54

j) 123.89×1000 123,890

k) 0.8×1000 800

l) $0.904 \times 10{,}000$ 9,040

Complete each table of related calculations:

a)

3 × 4 = 12
3 × 0.4 = 1.2
3 × 0.04 = 0.12
0.3 × 4 = 1.2

b)

5 × 3 = 15
0.5 × 3 = 1.5
0.5 × 0.3 = 0.15
5 × 0.03 = 0.15

c)

12 × 2 = 24
1.2 × 2 = 2.4
0.12 × 2 = 0.24
1.2 × 0.2 = 0.24

d)

6 × 3 = 18
0.06 × 3 = 0.18
0.6 × 0.3 = 0.18
60 × 3 = 180

e)

12 × 6 = 72
120 × 6 = 720
1.2 × 6 = 7.2
1.2 × 0.6 = 0.72

f)

14 × 1 = 14
1.4 × 1 = 1.4
14 × 0.1 = 1.4
14 × 0.01 = 0.14

1)	2	2)	0.8
3)	1.8	4)	15
5)	1.4	6)	8.1
7)	0.88	8)	9
9)	0.12	10)	0.75

3	0.3	3/10
6	0.06	6/100
1	4.21	1/100
5	9.54	5/10
2	145.2	2/10

6	436.5	6
9	5 183.09	9/100
4	145 078.2	40 000
8	8 000 657	8 000 000
3	7 304 287	300 000

What is the value of the...

3	9 435 001	30 000
6	1 826 008	6000
4	7 056 047	40
2	9 012 018	2000

5	4 159 324	50 000
5	2 540 931	500 000
7	5 136 047	7
9	9 670 123	9 000 000

Write each of these numbers in digits. Be careful - they are all different!

A Four thousand, two hundred 4, 200	**B** Forty thousand, two hundred 40,200	**C** Four hundred and two thousand 402,000	**D** Four hundred thousand and twenty 400,020
E Four thousand and twenty 4020	**F** Forty thousand and twenty 40,020	**G** Four hundred thousand and two 400,002	**H** Four thousand and two 4002
I Forty-two thousand 42,000	**J** Four hundred thousand, two hundred 400,200	**K** Forty thousand and two 40,002	**L** Four hundred and twenty thousand 420,000

ANSWERS—WEEK 2

Guess My Number

extra challenge

Use the clues to work out my number and record it in the spaces at the bottom

My number has the same number of tens and tenths

My number has a 0 in the hundreds column and a 1 in the hundredths column

My number has 9 digits and a decimal point

My number contains the digit 4 twice, but no other repeats

The digit 3 is next to the decimal point.

My number is less than 1 million but more than half a million

My number has a 7 in the thousands column

Extra hint: start with this clue

My number does not contain the digits 2 or 6

8 is next to 9 and 8 is on the left of 9

8	9	7	0	4	3	•	4	1	5

A Four Thousand and Eighty Two	G Eighty Two Thousand and Four	M 48,002
B Four Hundred and Eight Thousand	H Eight Hundred and Four Thousand	O 8,040
C Forty Eight Thousand and Two	I Forty Thousand, Eight Hundred	Q 40,800
D Fourteen thousand, eight hundred and twenty	J Eight Thousand and Forty	S 840,800
E Four Hundred Thousand and Eighty	K Eighteen Thousand and Four	U 804,000
F Forty Thousand and Eight	L Eight Hundred and Forty Thousand, Eight Hundred	W 14,820

N 408,000	
P 400,080	
R 4,082	
T 40,008	
V 82,004	
X 18,004	

A	B	C	D	E	F	G	H	I	J	K	L
R	N	M	W	P	T	V	U	Q	O	X	S

ANSWERS—WEEK 4

×	7	2	12	4	6	8	11	3	5	9	10
4	28	8	48	16	24	32	44	12	20	36	40
7	49	14	84	28	42	56	77	21	35	63	70
12	84	24	144	48	72	96	132	36	60	108	120
2	14	4	24	8	12	16	22	6	10	18	20
5	35	10	60	20	30	40	55	15	25	45	50
8	56	16	96	32	48	64	88	24	40	72	80
11	77	22	132	44	66	88	121	33	55	99	110
9	63	18	108	36	54	72	99	27	45	81	90
3	21	6	36	12	18	24	33	9	15	27	30
6	42	12	72	24	36	48	66	18	30	54	60
10	70	20	120	40	60	80	110	30	50	90	100

Work out

1) 62	2) 84	3) 78
4) 93	5) 55	6) 37
7) 51	8) 16	9) 56
10) 13	11) 80	12) 65

Work out:

a) 448 ÷ 8 56 b) 211 ÷ 5 42.2 c) 941 ÷ 5 188.2

d) 218 ÷ 5 43.6 e) 4.5 ÷ 4 1.125 f) 0.0171 ÷ 3 0.0057

Use short division to write these fractions as decimals:

ANSWERS—WEEK 5

Given that $a = 3$, evaluate:

a) $10a$ 30

b) a^2 9

c) $\frac{a}{3}$ 1

d) $5a - 1$ 14

e) $4a + 2$ 14

f) $7 + a$ 10

g) $7a$ 21

h) $2a + 5$ 11

i) $5 - a$ 2

j) a^3 27

k) $4 + 2a$ 10

l) $3a - 2$ 7

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

×	10	7	12	9	4	11	6	3	8	2	5
6	60	42	72	54	24	66	36	18	48	12	30
9	90	63	108	81	36	99	54	27	72	18	45
11	110	77	132	99	44	121	66	33	88	22	55
8	80	56	96	72	32	88	48	24	64	16	40
2	20	14	24	18	8	22	12	6	16	4	10
7	70	49	84	63	28	77	42	21	56	14	35
10	100	70	120	90	40	110	60	30	80	20	50
12	120	84	144	108	48	132	72	36	96	24	60
4	40	28	48	36	16	44	24	12	32	8	20
5	50	35	60	45	20	55	30	15	40	10	25
3	30	21	36	27	12	33	18	9	24	6	15

Calculate:

a)

6 × 4 = 24
6 × 400 = 2400
60 × 4 = 240
60 × 40 = 2400

b)

9 × 2 = 18
9000 × 2 = 18,000
9 × 200 = 1800
90 × 20 = 1800

c)

5 × 3 = 15
50 × 3 = 150
5 × 3000 = 15,000
5000 × 3 = 15,000

ANSWERS—WEEK 7

challenge

1. $6 \times 7 = 42$
2. $0.6 \times 7 = 4.2$
3. $3 \times 4 = 12$
4. $0.3 \times 0.4 = 0.12$
5. $8 \times 9 = 72$
6. $80 \times 0.09 = 7.2$
7. $4 \times 4 = 16$
8. $400 \times 400 = 160000$

more

A. $0.9 \times 0.3 = 0.27$

B. $80 \times 0.06 = 4.8$

C. $300 \times 0.4 = 120$

D. $25 \times 0.06 = 1.5$

E. $34 \times 0.08 = 2.72$

answers

$12 \times 400 = 4800$
$12 \times 40 = 480$
$\mathbf{12 \times 4 = 48}$
$12 \times 0.4 = 4.8$
$12 \times 0.04 = 0.48$
$12 \times 0.004 = 0.048$

$19 \times 900 = 17100$
$\mathbf{19 \times 90 = 1710}$
$19 \times 9 = 171$
$19 \times 0.9 = 17.1$
$19 \times 0.09 = 1.71$
$19 \times 0.009 = 0.171$

$23 \times 9 = 207$
$\mathbf{23 \times 0.9 = 20.7}$
$23 \times 0.09 = 2.07$
$23 \times 0.009 = 0.207$
$23 \times 0.0009 = 0.0207$
$23 \times 0.00009 = 0.00207$

$1.7 \times 19 = 32.3$
$\mathbf{17 \times 1.9 = 32.3}$
$0.17 \times 0.19 = 0.0323$
$17 \times 190 = 3230$
$1.7 \times 0.19 = 0.323$
$1.7 \times 1900 = 3230$

$23 \times 9 = 207$
$\mathbf{2.3 \times 0.9 = 2.07}$
$23 \times 0.09 = 2.07$
$0.23 \times 0.09 = 0.0207$
$2.3 \times 900 = 2070$
$2.3 \times 0.009 = 0.0207$

$9 \times 1.2 = 10.8$
$\mathbf{0.9 \times 12 = 10.8}$
$0.09 \times 120 = 10.8$
$0.009 \times 1200 = 10.8$
$0.0009 \times 12000 = 10.8$
$\ldots \times \ldots = \text{lots of answers}$

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ANSWERS—WEEK 8

(a) Yes

(b) No

(c) No

(d) No

(e) No

Answers

Work out what is happening in the sequences.
Can you figure out the missing terms?

A	7	12	17	22	27	32	
B	5	8	11	14	17	20	
C	16	13	10	7	4	1	
D	15	9	3	-3	-9	-15	
E	22	14	6	-2	-10	-18	
F	9	12	15	18	21	24	
G	-3	1	5	9	13	17	

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.

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

×	11	8	12	5	7	3	10	6	9	4	2
7	77	56	84	35	49	21	70	42	63	28	14
12	132	96	144	60	84	36	120	72	108	48	24
6	66	48	72	30	42	18	60	36	54	24	12
10	110	80	120	50	70	30	100	60	90	40	20
2	22	16	24	10	14	6	20	12	18	8	4
8	88	64	96	40	56	24	80	48	72	32	16
11	121	88	132	55	77	33	110	66	99	44	22
9	99	72	108	45	63	27	90	54	81	36	18
3	33	24	36	15	21	9	30	18	27	12	6
5	55	40	60	25	35	15	50	30	45	20	10
4	44	32	48	20	28	12	40	24	36	16	8

Complete these multiplication grids:

a)

×	6	8	10
3	18	24	30
4	24	32	40
20	120	160	200

b)

×	3	20	30
2	6	40	60
5	15	100	150
40	120	800	1200

c)

×	5	30	25
2	10	60	50
20	100	600	500
100	500	3000	2500

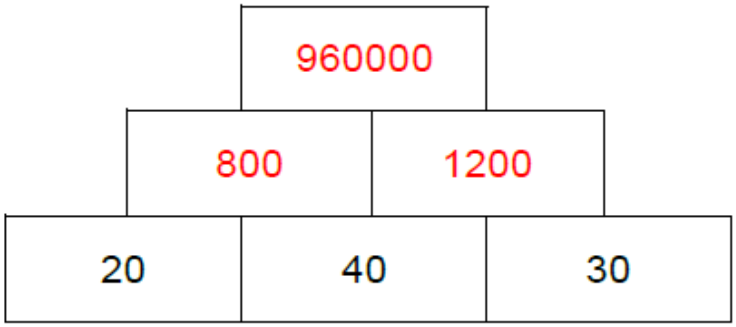
d)

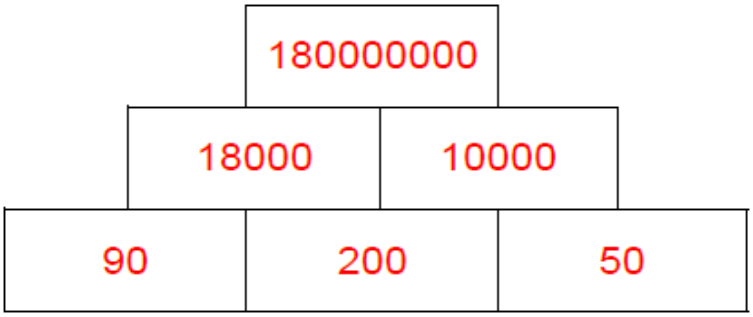
×	2	50	100
4	8	200	400
7	14	350	700
90	180	4500	9000

1) *A school wants to take 240 year 7 students on a school trip. The school decides to book coaches. Each coach seats 80 pupils. How many coaches should the school book ?* 3

2) *A large company holds a meeting for all its employees in a large conference hall. There are 2800 employees in the company. Each row seats 70 people. How many rows in the conference hall will be filled ?* 40

3) *A car dealer has to sell 120 Fordo cars next year. The car dealer wants to have sales of at least £960'000. What price must the car dealer sell each car for in order to make sales of at least £960'000 ?* £8000





1) 3 x 20 = 60

2) 7 x 40 = 280

3) 9 x 60 = 540

4) 8 x 50 = 400

5) 12 x 70 = 840

6) 6300 ÷ 70 = 90

7) 3600 ÷ 60 = 60

8) 5600 ÷ 70 = 80

9) 12100 ÷ 110 = 110

10) 10800 ÷ 90 = 120

1. Label these angles as acute, right, obtuse or reflex:

obtuse

right

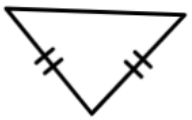
acute

reflex

a)

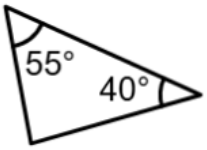
equilateral

b)



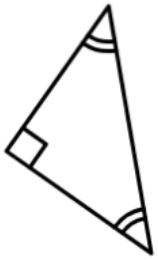
isosceles

c)



scalene

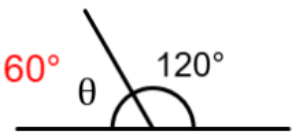
d)



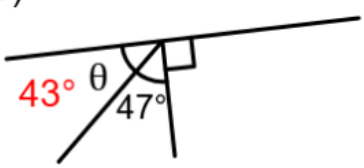
isosceles

Work out the size of each missing angle on these straight lines, marked θ:

a)

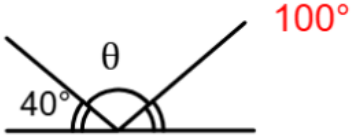


b)

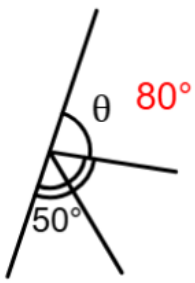


c)

d)



e)



Section A

1)

a = 50°

2)

b = 85°

3)

c = 30°

4)

d = 73°

5)

e = 128°

6)

f = 60°

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