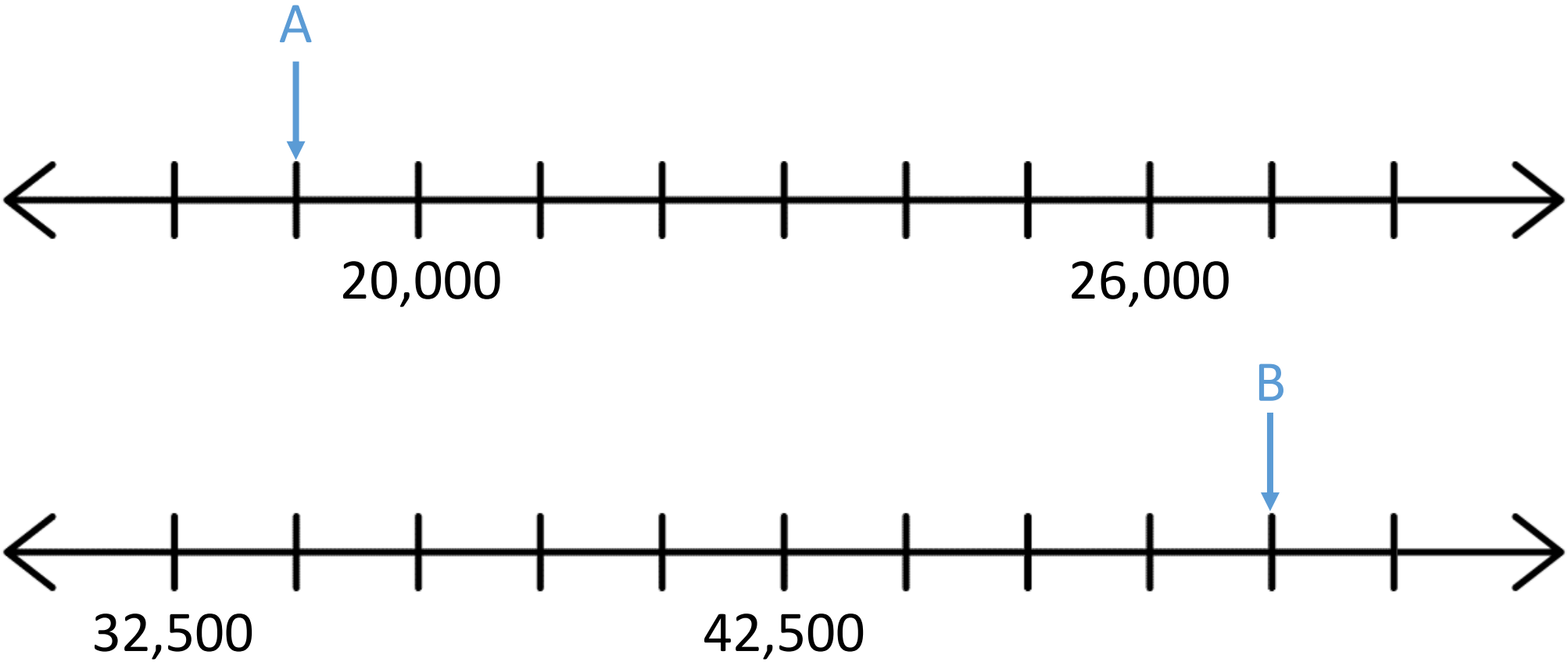
White Rose Maths

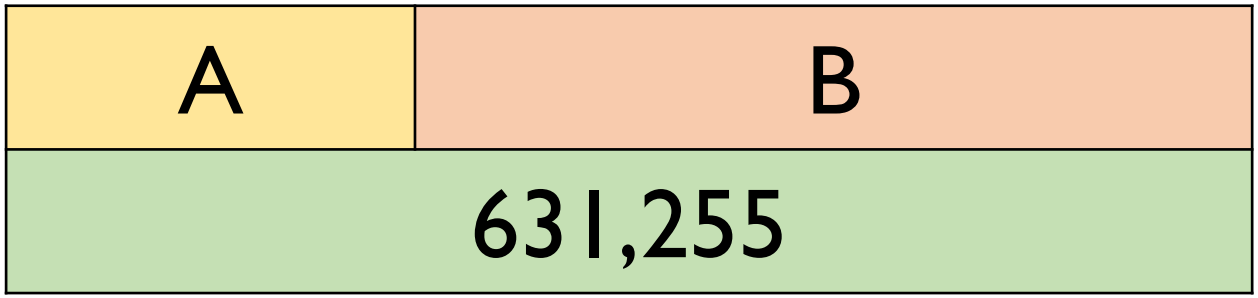
Year 6

Four Operations

Find the difference between A and B.



Here is a bar model.



A is an odd number which rounds to 100,000 to the nearest ten thousand. It has a digit total of 30

B is an even number which rounds to 500,000 to the nearest hundred thousand.

It has a digit total of 10
A and B are multiples of 5

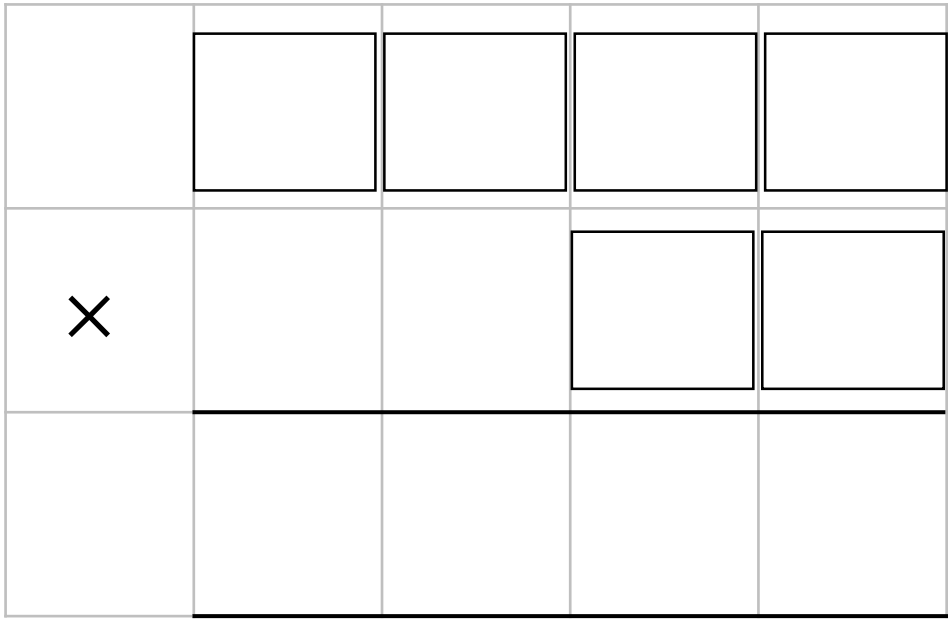
What are possible values of A and B?

True or False?

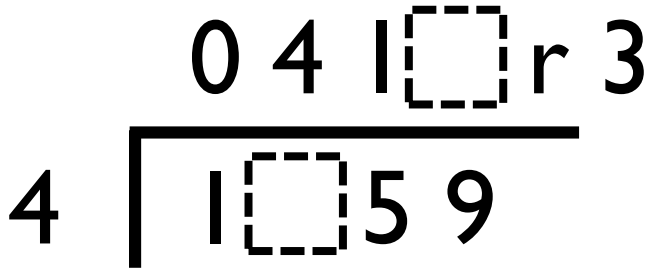
- $5{,}463 \times 18 = 18 \times 5{,}463$
- I can find the answer to $1{,}100 \times 28$ by calculating $1{,}100 \times 30$ and subtracting 2 lots of 1,100
- $702 \times 9 = 701 \times 10$

2	3	4	5	7	8

Place the digits in the boxes to make the largest product.



Find the missing digits.



Here are two calculations.

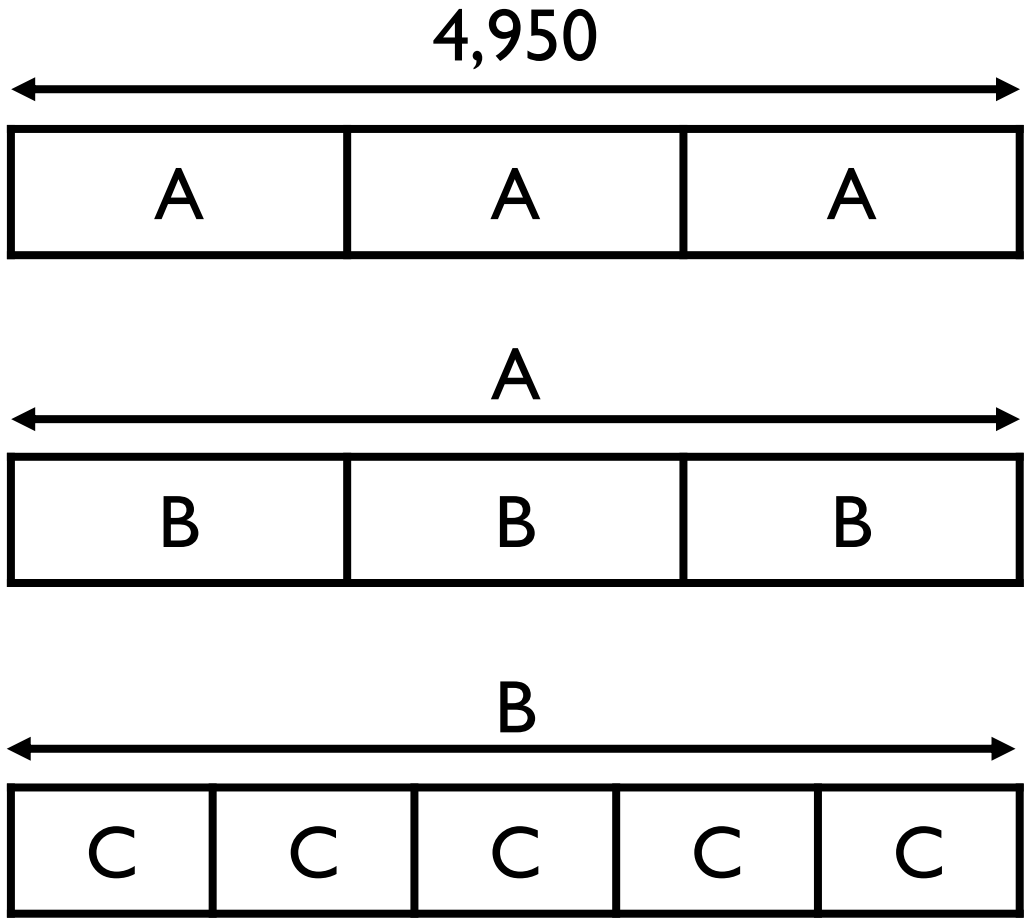
$A = 396 \div 11$

$B = 832 \div 13$

Find the difference between A and B.

Work out the value of C.

(The bar models are not drawn to scale)



Calculate:

- 1,248 ÷ 48
- 1,248 ÷ 24
- 1,248 ÷ 12

What did you do each time?

What was your strategy?

What do you notice? Why?

Tommy says,

To calculate 4,320 ÷ 15
I will first divide 4,320 by 5 then divide the answer by 10

Do you agree?
Explain why.

Class 6 are calculating 7,848 ÷ 24

The children decide which factor pairs to use. Here are some of their suggestions:

2 and 12	1 and 24
4 and 6	10 and 14

Which will not give them the correct answer? Why?

Use the correct factor pairs to calculate the answer. Is the answer the same each time?

Which factor pair would be the least efficient to use? Why?

Odd One Out

Which is the odd one out?
Explain your answer.

$$512 \div 16$$

$$672 \div 21$$

$$792 \div 24$$

Spot the Mistake

855 ÷ 15 =

		0	5	1	0	
1	5	8	5	5		
	–	7	5			
		1	0	5		
	–	1	0	5		
				0		

Which calculation is harder?

$$1{,}950 \div 13$$

$$1{,}950 \div 15$$

Explain why.

$6{,}120 \div 17 = 360$

Explain how to use this fact to find 

$6{,}480 \div$  $= 360$

Here are two calculation cards.

$A = 396 \div 11$

$B = 832 \div 11$

Whitney thinks there won't be a remainder for either calculation because 396 and 832 are both multiples of 11

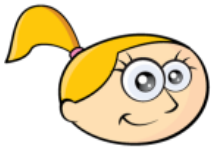
Rosie disagrees, she has done the written calculations and says **one** of them has a remainder.

Who is correct? Explain your answer.

576 children and 32 adults need transport for a school trip. A coach holds 55 people.

We need 10 coaches.

Dora



We need 11 coaches.

Eva

We need 12 coaches.

Alex

Who is correct? Explain how you know.

How many spare seats will there be?

Class 6 are calculating three thousand, six hundred and thirty-three divided by twelve.

Rosie says that she knows there will be a remainder without calculating.

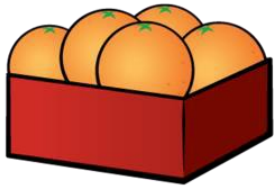
Is she correct?
Explain your answer.

What is the remainder?

Which numbers up to 20 can 4,236 be divided by without having a remainder?

What do you notice about all the numbers?

There are 49 pears and 56 oranges.



They need to be put into baskets of pears and baskets of oranges with an equal number of fruit in each basket.

Amir says,

There will be 8 pieces of fruit in each basket.

Jack says,

There will be 7 pieces of fruit in each basket.

Who is correct? Explain how you know.

Tommy has two pieces of string.

One is 160 cm long and the other is 200 cm long.

He cuts them into pieces of equal length.

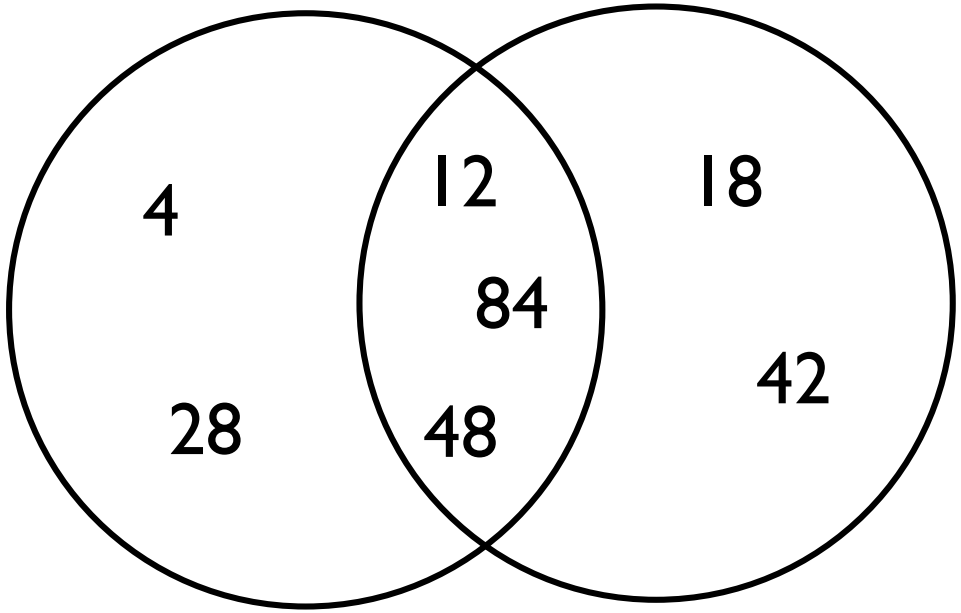
What are the possible lengths the pieces of string could be?

Dora has 32 football cards that she is giving away to his friends.

She shares them equally between her friends.

How many friends could Dora have?

Work out the headings for the Venn diagram.



Add in one more number to each section.

Can you find a square number that will go in the middle section of the Venn diagram?

Annie is double her sister's age.

They are both older than 20 but younger than 50

Their ages are both multiples of 7

What are their ages?

A train starts running from Leeds to York at 7am.
The last train leaves at midnight.

Platform 1 has a train leaving from it every 12 minutes.
Platform 2 has one leaving from it every 5 minutes.

How many times in the day would there be a train leaving from both platforms at the same time?

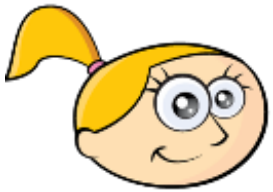
Use the clues to work out the number.

- It is greater than 10
- It is an odd number
- It is not a prime number
- It is less than 25
- It is a factor of 60

Shade in the multiples of 6 on a 100 square.

What do you notice about the numbers either side of every multiple of 6?

Eva says,



I noticed there is always a prime number next to a multiple of 6

Is she correct?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Place 5 odd and 5 even numbers in the table.

	Not Cubed	Cubed
Over 100		
100 or less		

Jack says,

The smallest number that is both a square number and a cube number is 64

Do you agree with Jack? Explain why you agree or disagree.

Shade in all the square numbers on a 100 square.

Now shade in multiples of 4

What do you notice?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Countdown

25	50	75	100

1	2	3	4	5	6	7	8	9	10

Children randomly select 6 numbers.

Reveal a target number.

Children aim to make the target number ensuring they can write it as a single calculation using order of operations.

Write different number sentences using the digits 3, 4, 5 and 8 before the equals sign that use:

- One operation
- Two operations with no brackets
- Two operations with brackets

3	4	5	8

Class 6 are calculating the total of 3,912 and 3,888

Alex says,

We can just double 3,900

Is Alex correct? Explain.

$$2{,}000 - 1{,}287$$

Here are three different strategies for this subtraction calculation:

Dora

I used the column method.

Tommy

I used my number bonds from 87 to 100 then from 1,300 to 2,000

Jack

I subtracted one from each number and then used the column method.

Whose method is most efficient?

$$3{,}565 + 2{,}250 = 5{,}815$$

Use this calculation to decide if the following calculations are true or false.

True or False?

$4{,}565 + 1{,}250 = 5{,}815$

$5{,}815 - 2{,}250 = 3{,}565$

$4{,}815 - 2{,}565 = 2{,}250$

$3{,}595 + 2{,}220 = 5{,}845$

Which calculations will give an answer that is the same as the product of 12 and 8?

$3 \times 4 \times 8$

$12 \times 4 \times 2$

$2 \times 10 \times 8$