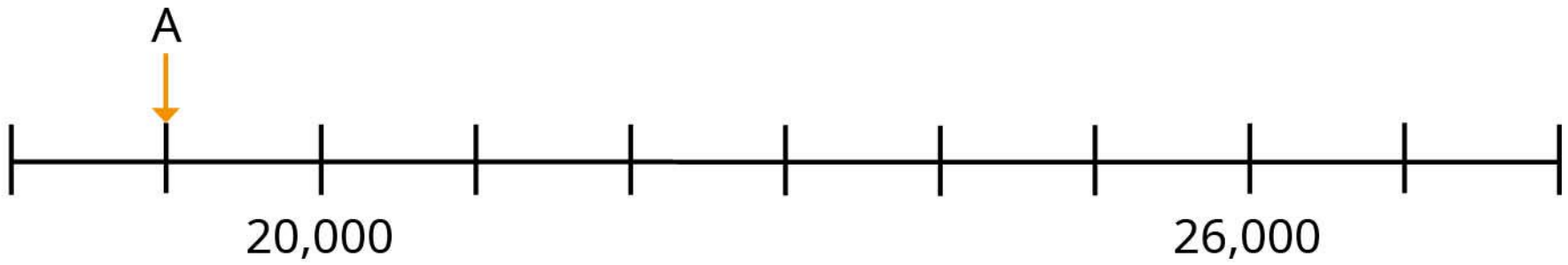
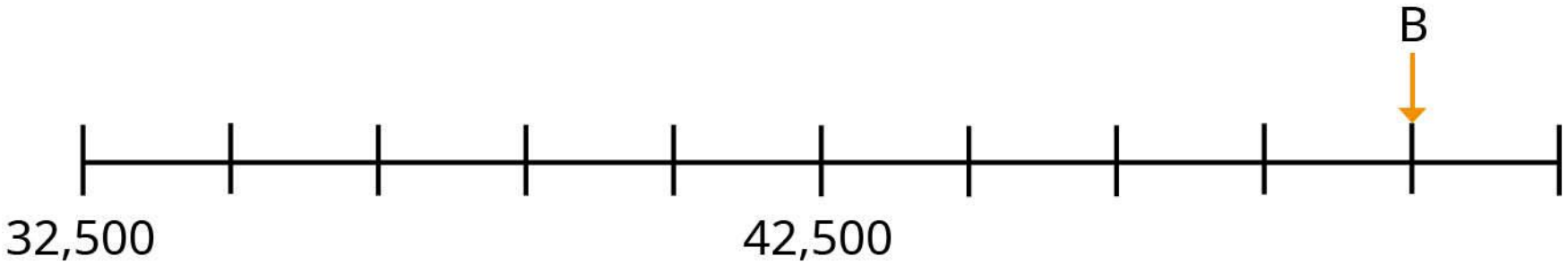
Autumn Block 2

Addition, subtraction, multiplication and division

White Rose MATHS

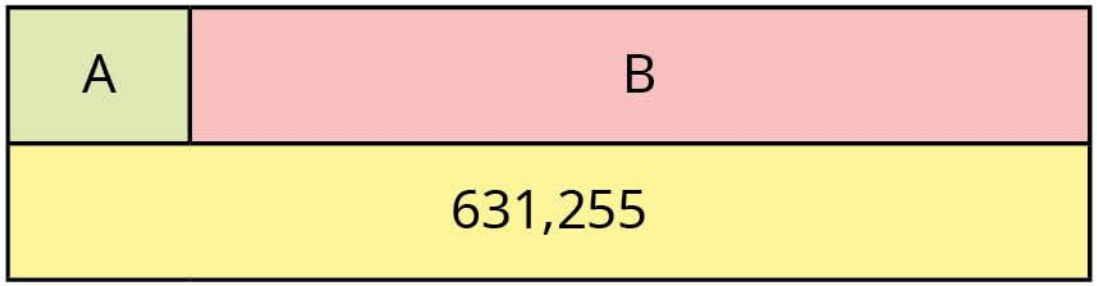
Find the difference between A and B.





Explain your method to a partner.

Here is a bar model.

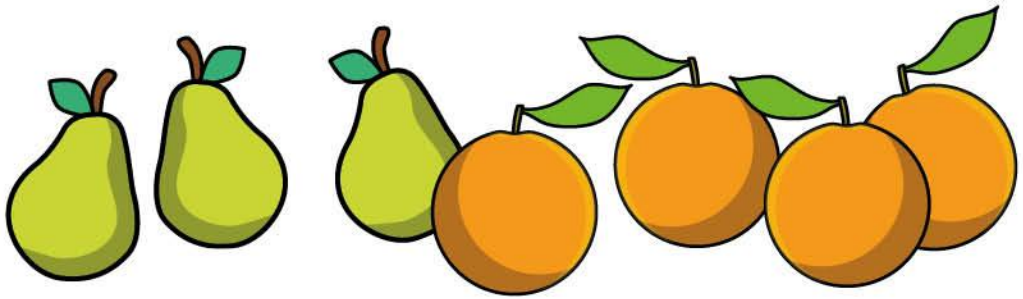


- A is an odd integer that rounds to 100,000 to the nearest 10,000
- The sum of the digits of A is 30
- B is an even integer that rounds to 500,000 to the nearest 100,000
- The sum of the digits of B is 10
- A and B are both multiples of 5

What could be the values of A and B?

Explain your reasoning to a partner.

A fruit stall has 49 pears and 56 oranges.

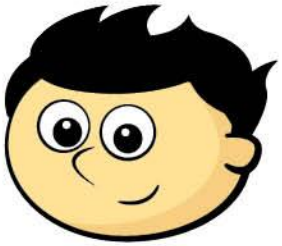


The pieces of fruit are put into boxes with an equal number of pears or oranges in each box.

Tiny

There will be 8 pieces of fruit in each box.

There will be 7 pieces of fruit in each box.



Jack

Who is correct, Tiny or Jack?

Explain how you know.

Brett has two pieces of string.

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

He cuts them both into smaller pieces.

All the pieces are the same length.

What are the possible lengths of the smaller pieces of string?

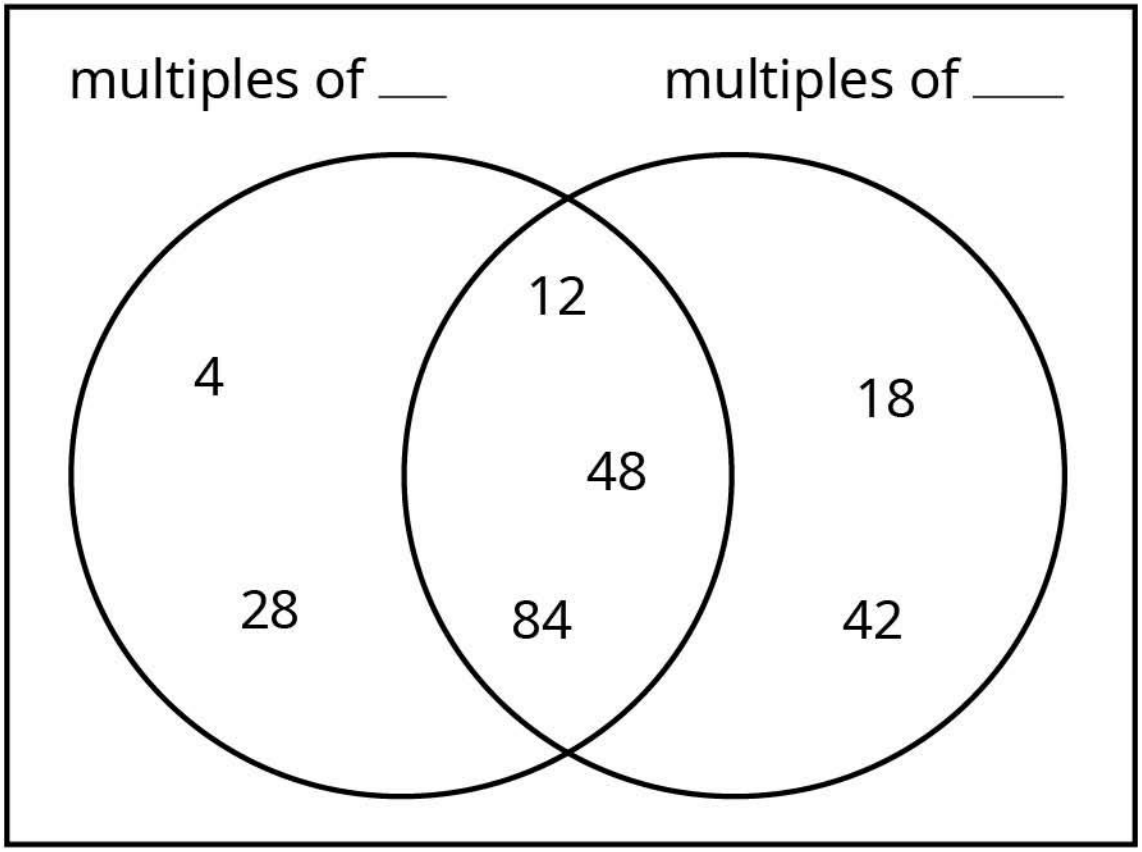
Dani has 54 red sweets and 45 green sweets.

She puts them into bags so that each bag has an equal number of red sweets and an equal number of green sweets.

What is the greatest number of bags she can make?

How many sweets of each colour will there be in each bag?

Complete the labels of the sorting diagram.



Write another number in each section.

Find a square number that will go in the middle section.

Compare answers with a partner.

Ms Fisher's age is double her sister's age.

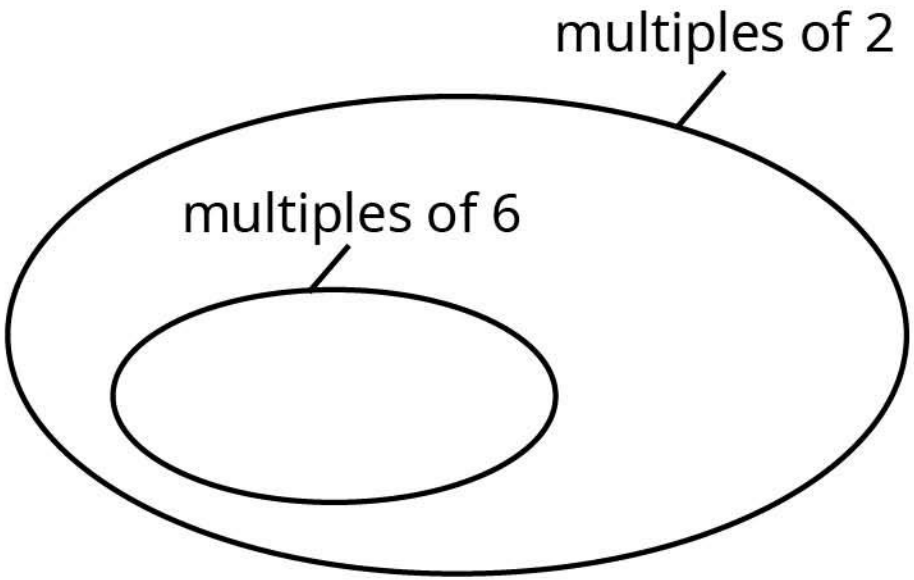
They are both older than 20 but younger than 50

Their ages are both multiples of 7

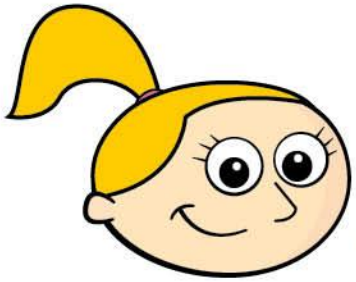
What are their ages?

Write the numbers in the sorting diagram.

10	12	14	16	18	20



The year number of a leap year is divisible by 4



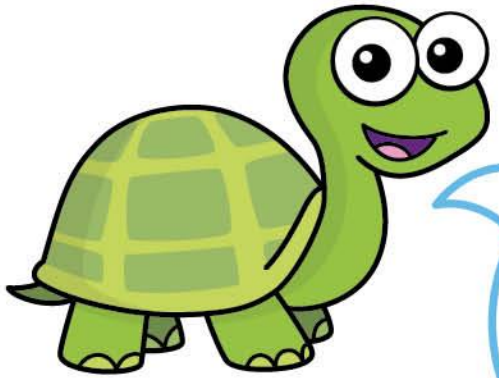
If the final two digits of a number are divisible by 4, then the number itself is divisible by 4

Use Eva's rule to find out which of these years were, or will be, leap years.

1536	1674	1928	1992
2024	2050	2062	2956

Why does this rule work?

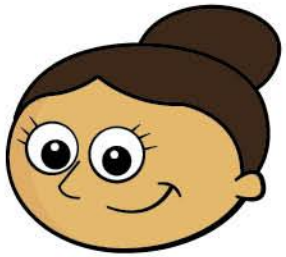
Tiny and Dora are talking about rules for division.



Tiny

If a number is divisible by 10, then it must also be divisible by 5

If a number is divisible by 5, then it must also be divisible by 10

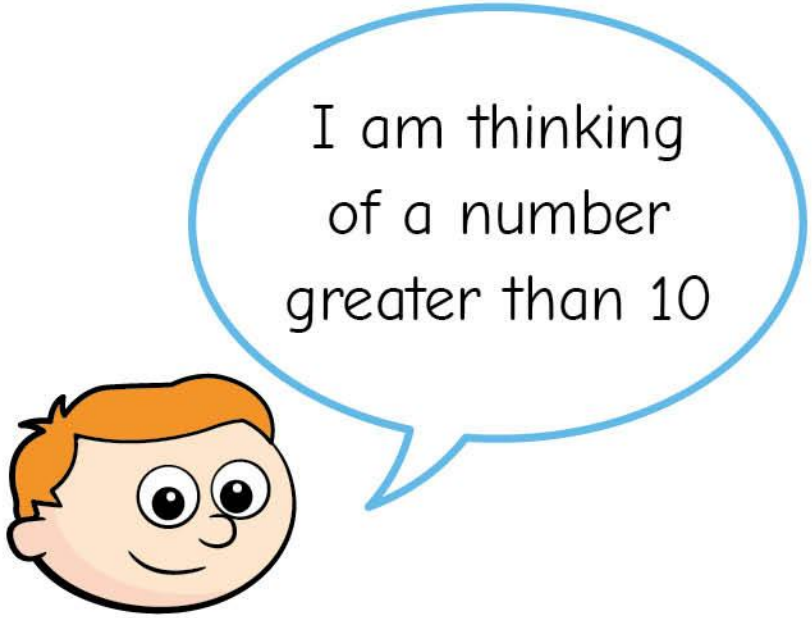


Dora

Do you agree with Tiny and Dora?

Explain your answer.

Ron is thinking of a number.

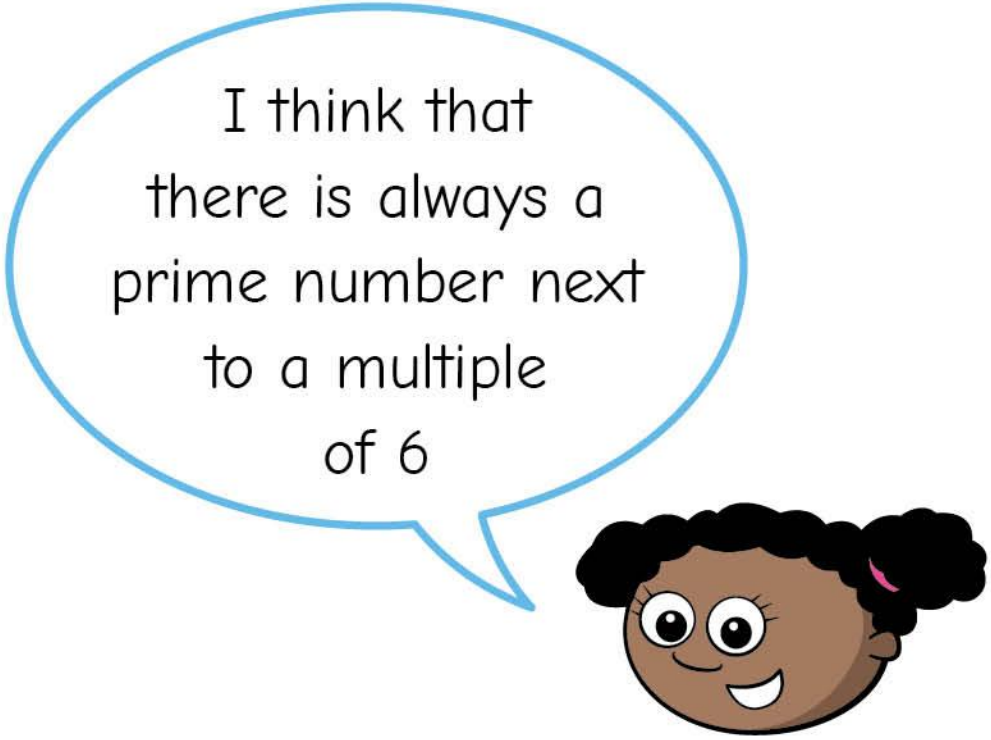


Use the clues to work out Ron's number.

- It is a composite number.
- It has two prime factors.
- It is an odd number.
- It is a factor of 60

Shade the multiples of 6 on a hundred square.

What do you notice about all the numbers either side of the multiples of 6?



Is Whitney correct?

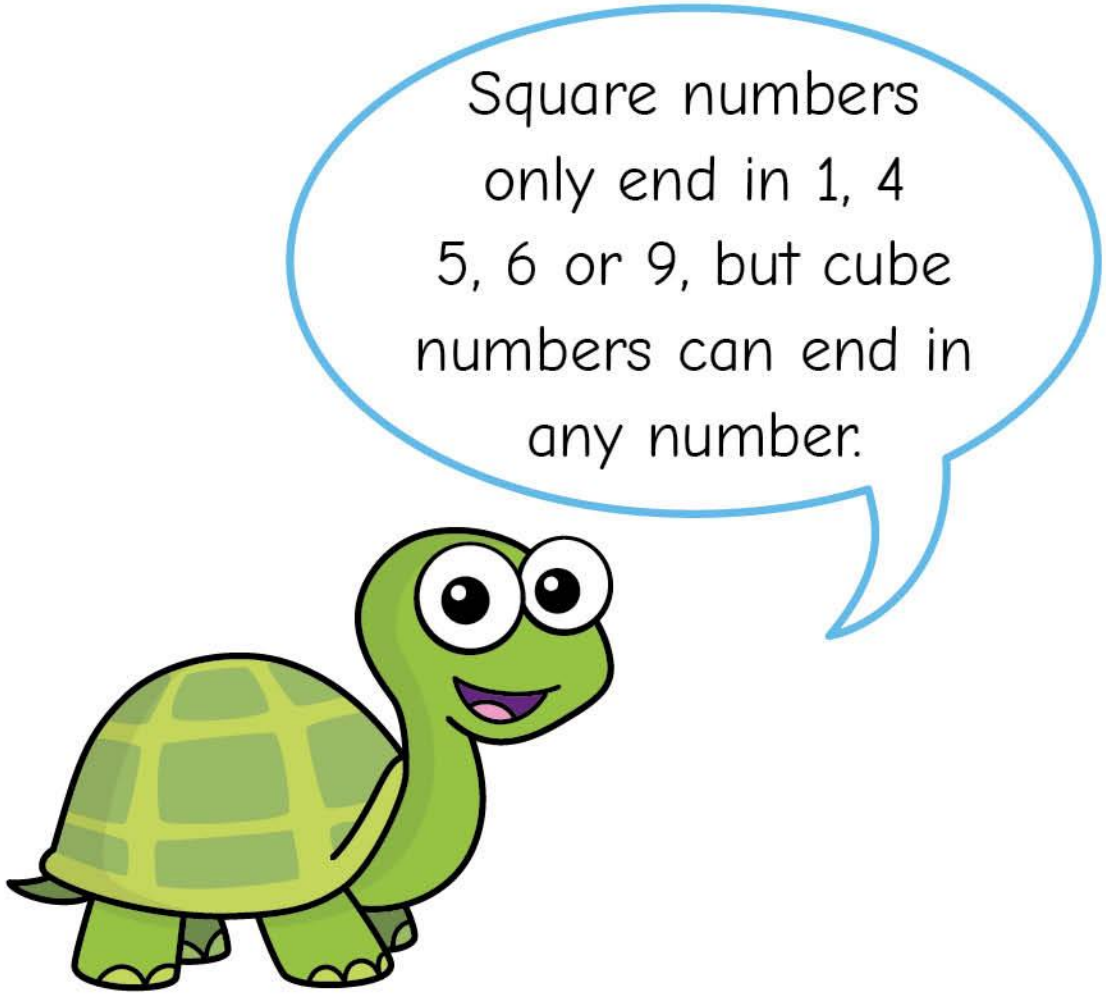
Explain your reasoning.

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

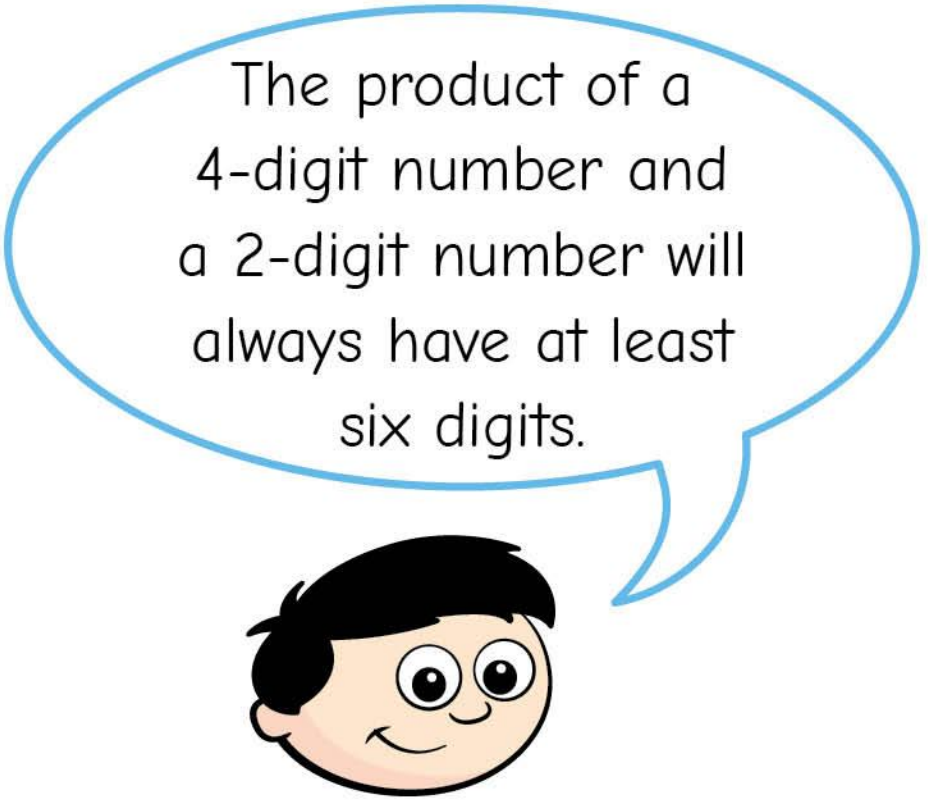
Shade all the square numbers.

Use a different colour to shade the multiples of 4

What do you notice?



Do you agree with Tiny?



Do you agree with Dexter?

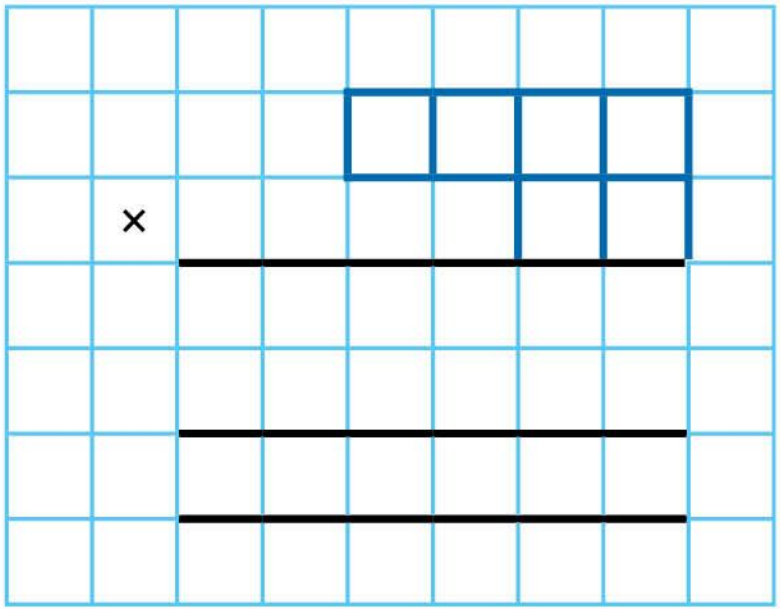
Explain your answer.

What is the product of the greatest 4-digit number and the greatest 2-digit number?

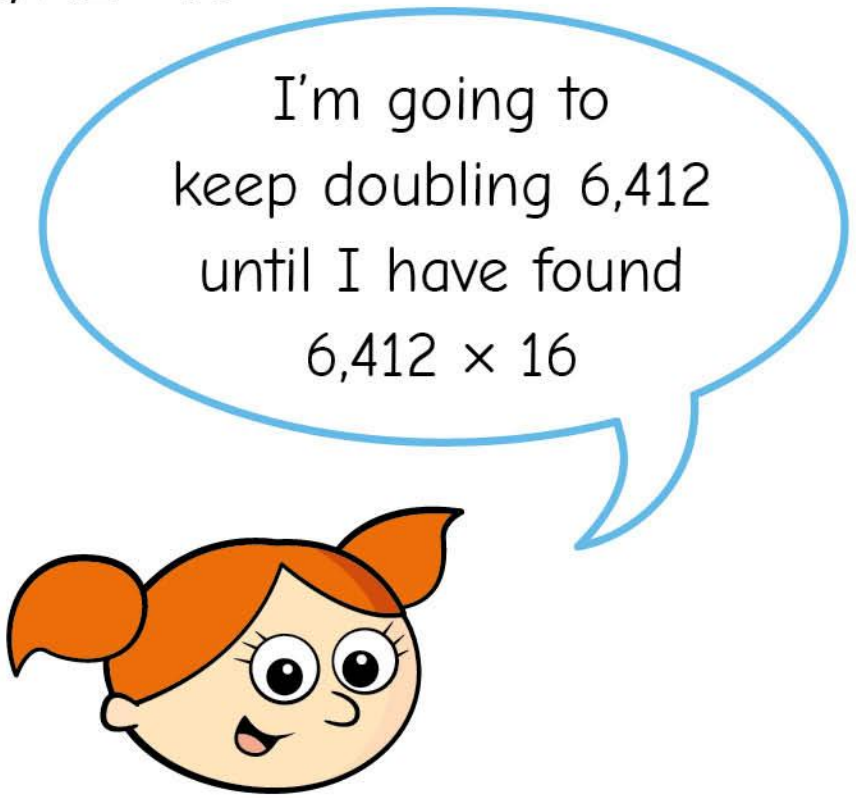
2	3	4
5	7	8

Write the digits in the boxes to find the greatest product.

You can use each digit once only.



Alex is working out 6,412 × 16

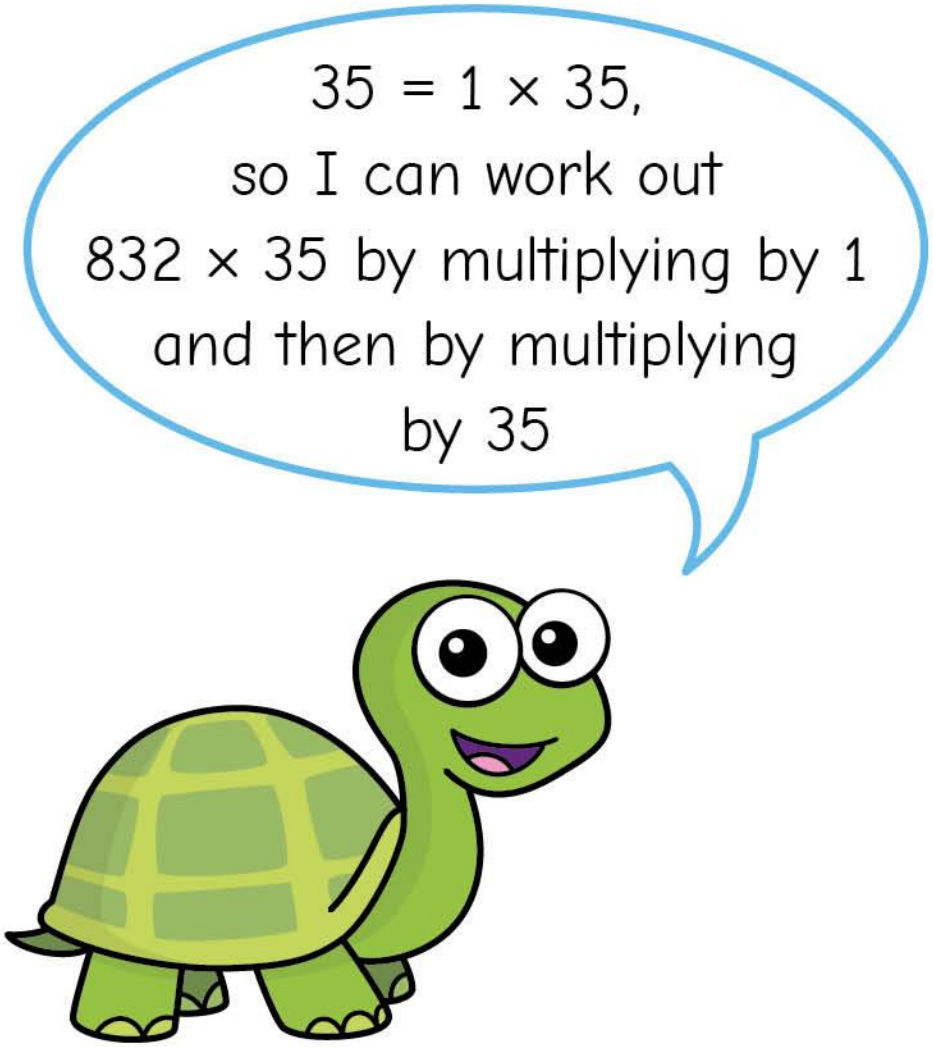


How many calculations will Alex have to do?

Use Alex's method to find 6,412 × 16

How else could Alex multiply by 16?

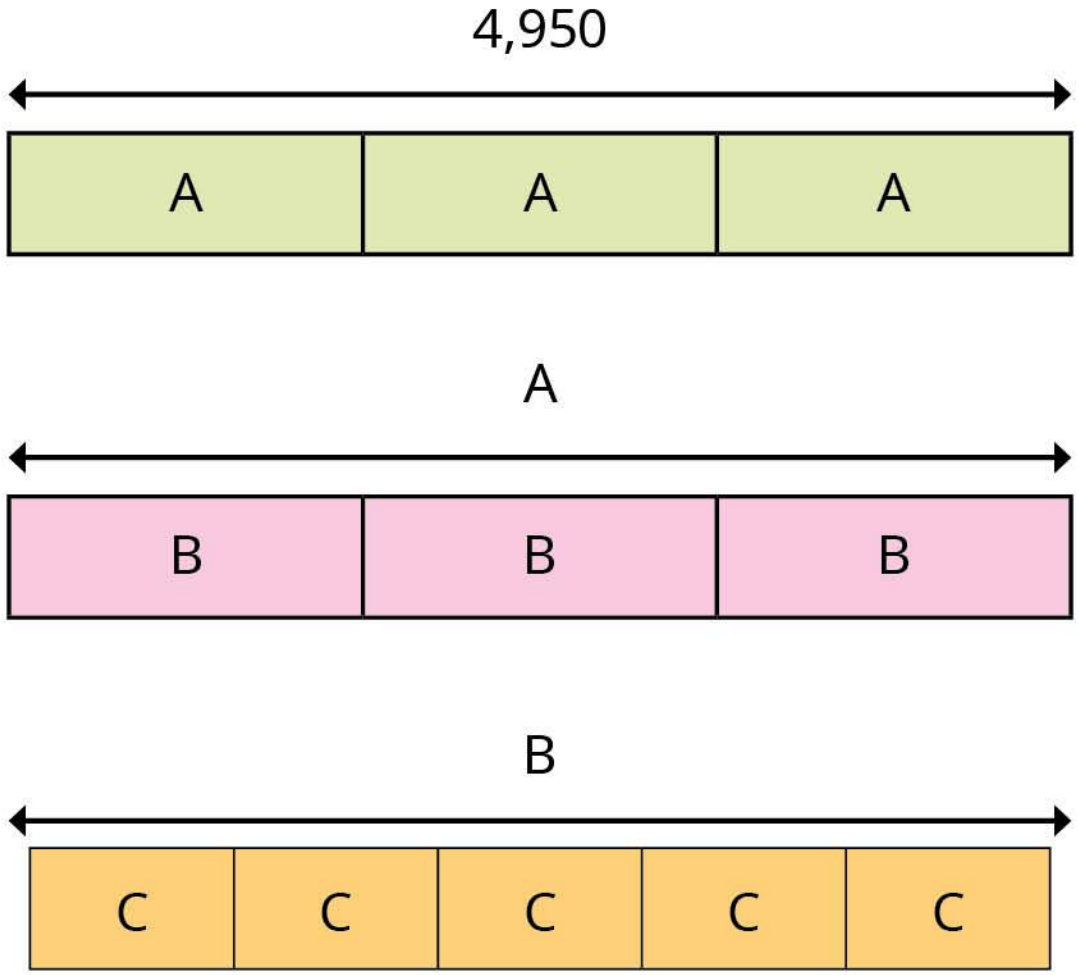
Talk about it with a partner.



Explain why Tiny's strategy is not a good one.

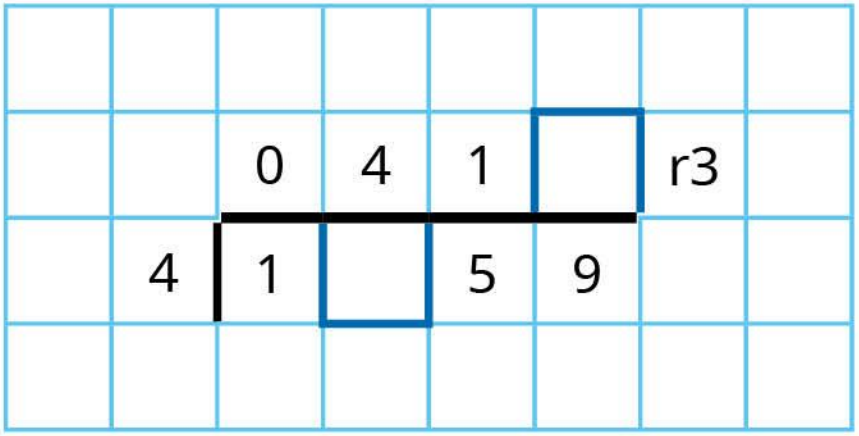
Use a different factor pair of 35 to work out 832 × 35

Here are three bar models.
They are not drawn to scale.



Work out the value of C.

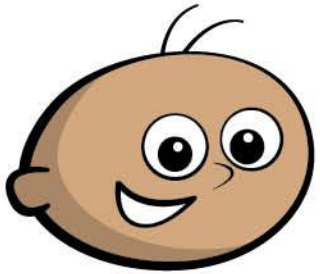
Work out the missing digits.



Work out the divisions.

275 ÷ 11	3,366 ÷ 11
6,036 ÷ 12	2,356 ÷ 12

Compare methods with a partner.



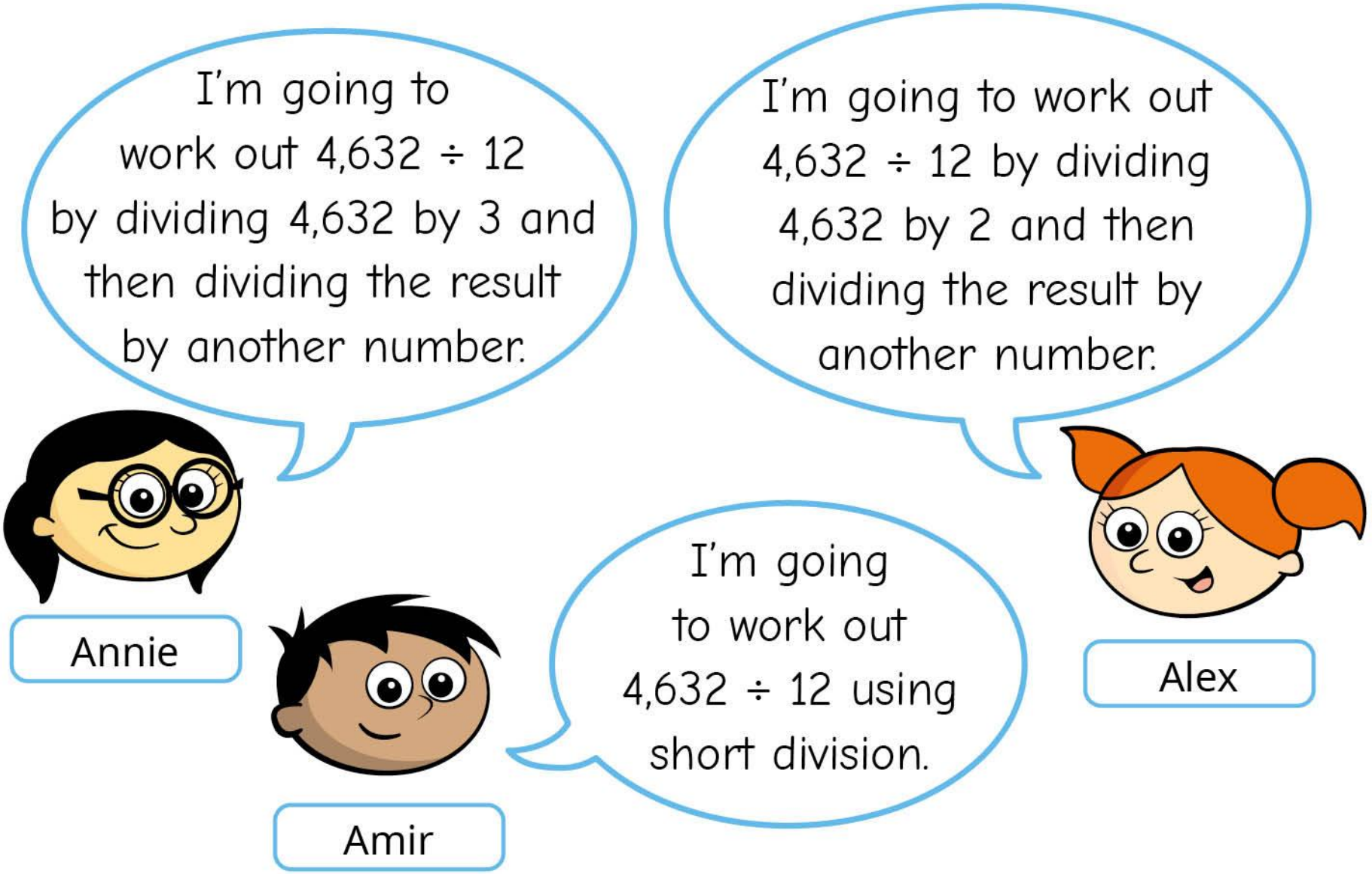
To calculate 4,320 ÷ 15, I will first divide 4,320 by 5 and then divide the answer by 10

Explain why Tommy is wrong.

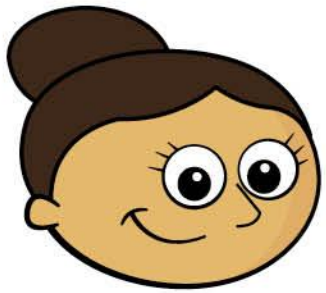
Use factor pairs to work out the divisions.

1,248 ÷ 48	1,248 ÷ 24
1,248 ÷ 12	

What do you notice about your answers?



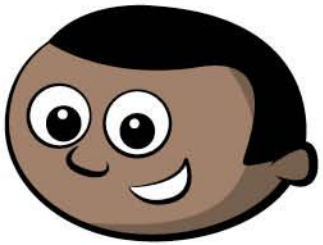
Compare the children's methods.



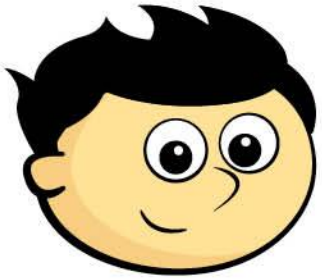
Dora

I'm going to work out 6,756 ÷ 12 by dividing 6,756 by 3 and then dividing the result by 4

I'm going to work out 6,756 ÷ 12 using long division.



Mo



Jack

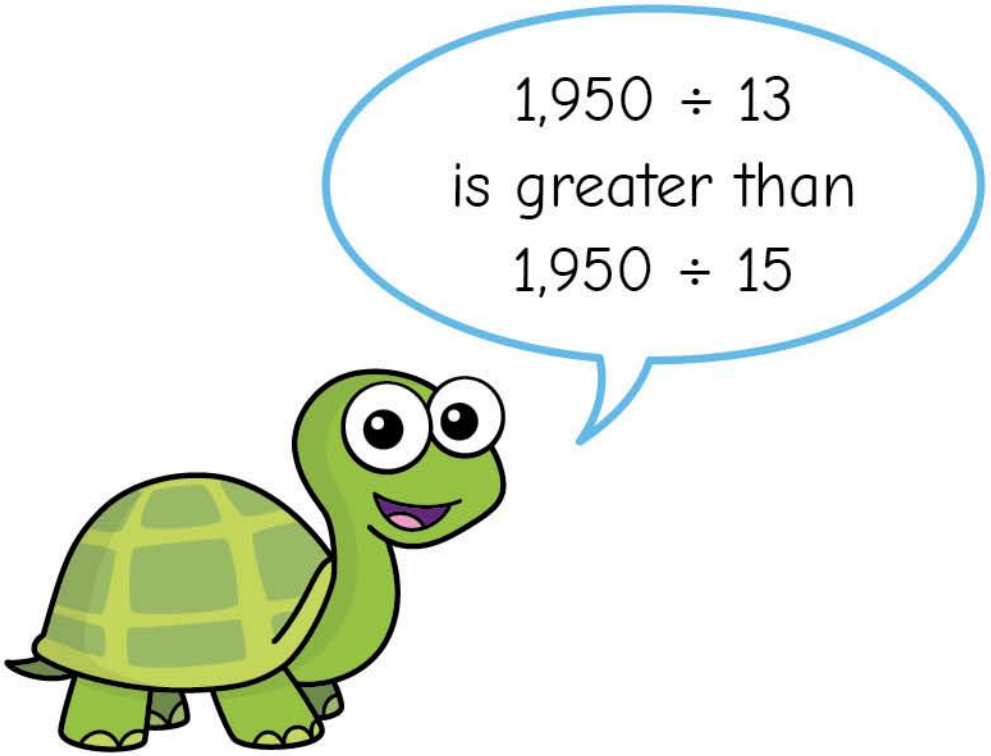
I'm going to work out 6,756 ÷ 12 using short division.

Compare the children's methods and talk about your favourite with a partner.

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

Use the given calculation to work out the missing number.

6,480 ÷ _____ = 360



Tiny is correct.

Find how much greater 1,950 ÷ 13 is than 1,950 ÷ 15

Which calculations will definitely have a remainder?

A $8,164 \div 20$

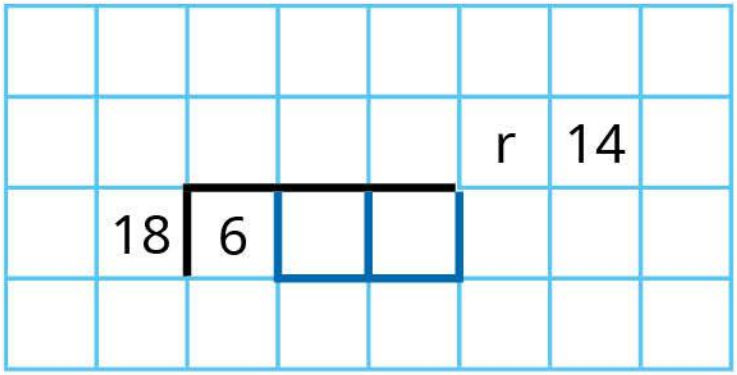
B $7,836 \div 15$

C $4,678 \div 18$

D $6,751 \div 12$

How do you know?

Two digits are missing from the division.



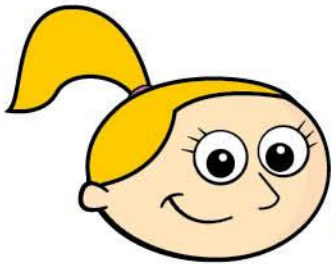
The missing digits are equal.

What must they be?

What could the digits be if they were not equal?

$$835 \div 17 = 48 \text{ r}19$$

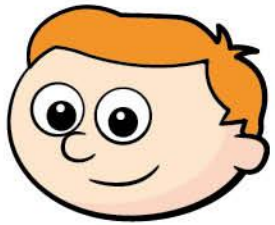
Explain why the calculation cannot be correct.



Eva

To divide a number by 5, I can divide the number by 10 and then halve the answer.

To divide a number by 5, I can divide the number by 10 and then double the answer.



Ron

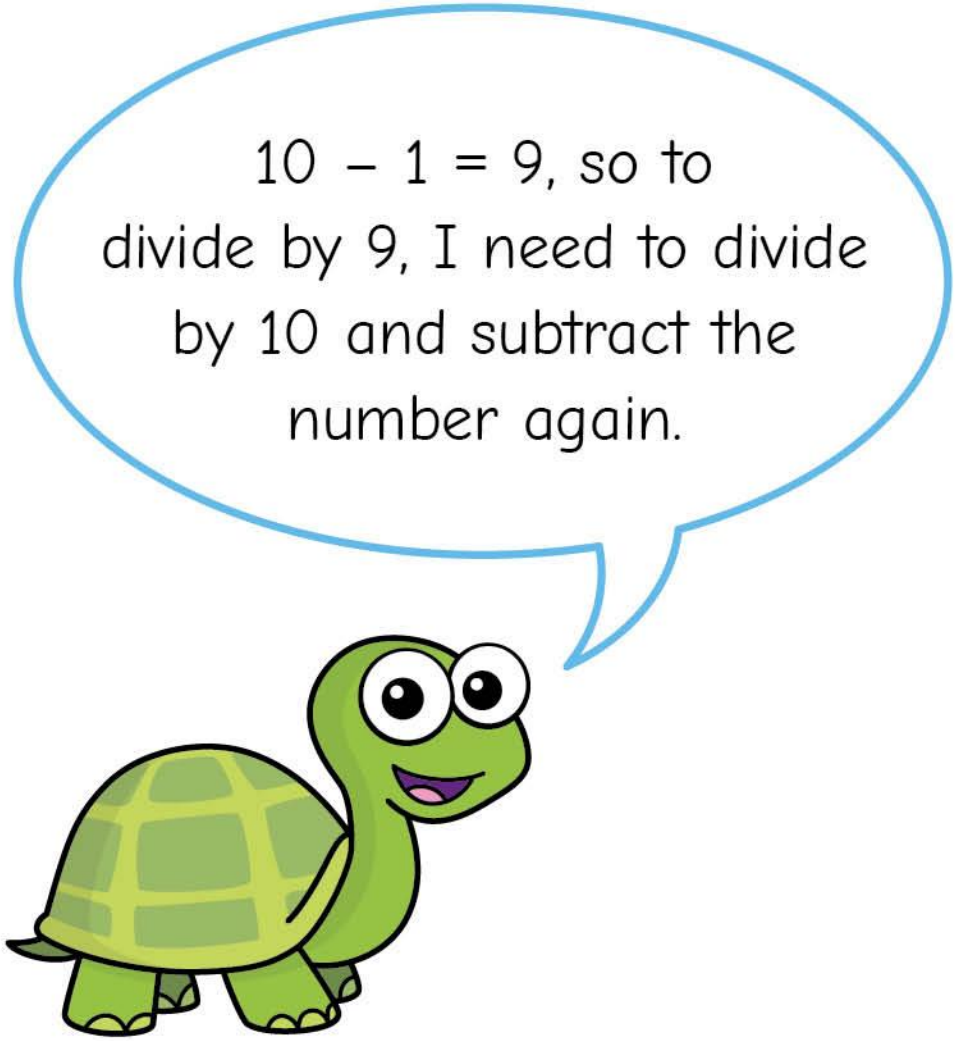
Who is correct?

Why is the other person incorrect?

Use the correct strategy to work out the divisions.

2,000 ÷ 5	3,600 ÷ 5	310 ÷ 5	100,000 ÷ 5

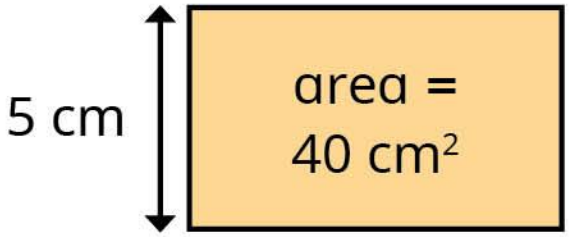
Tiny is trying to divide by 9



Explain why Tiny is wrong.

The area of a rectangular tile is 40 cm^2

The width of the tile is 5 cm.



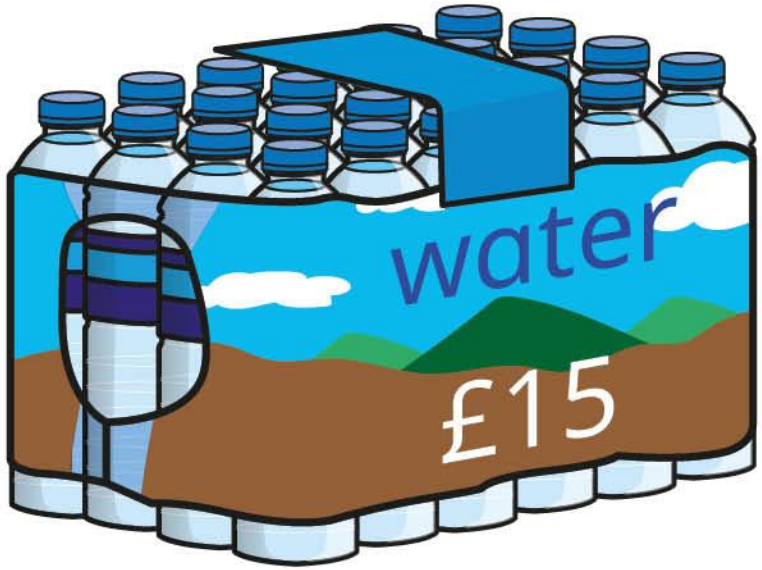
A strip of tiles is made by laying tiles end-to-end.

How long is a strip with 15 tiles?

How many tiles are needed to make a strip 280 cm long?

How many tiles are needed to make a strip 4 m long?

24 bottles of water cost £15

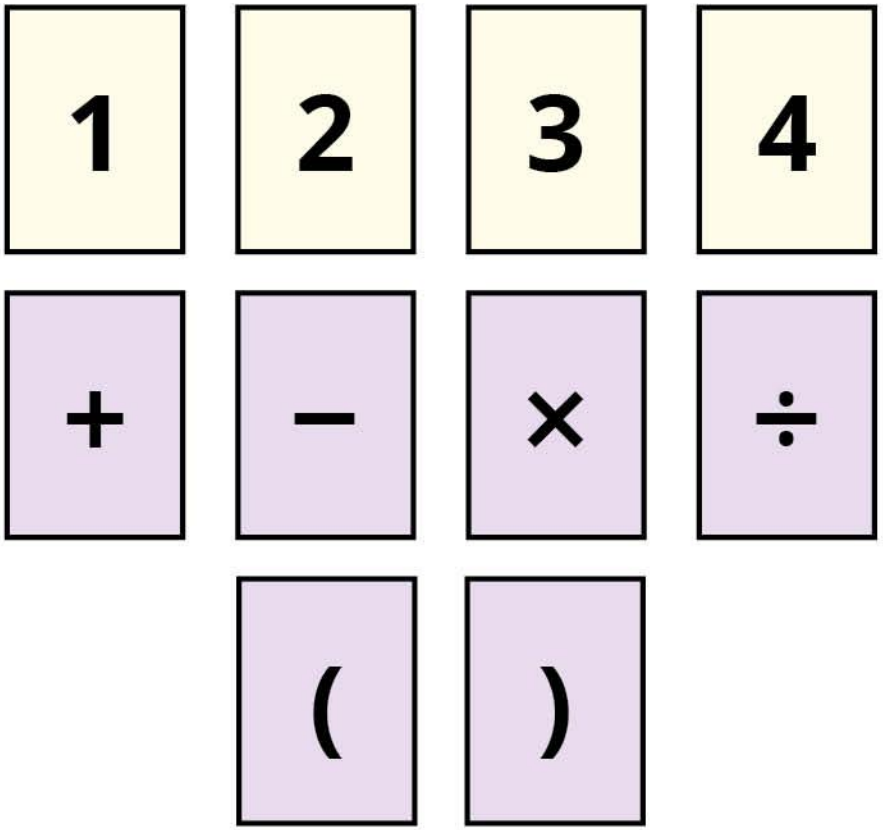


How many bottles of water can you buy for £30?

How many bottles of water can you buy for £300?

How many bottles of water can you buy for £525?

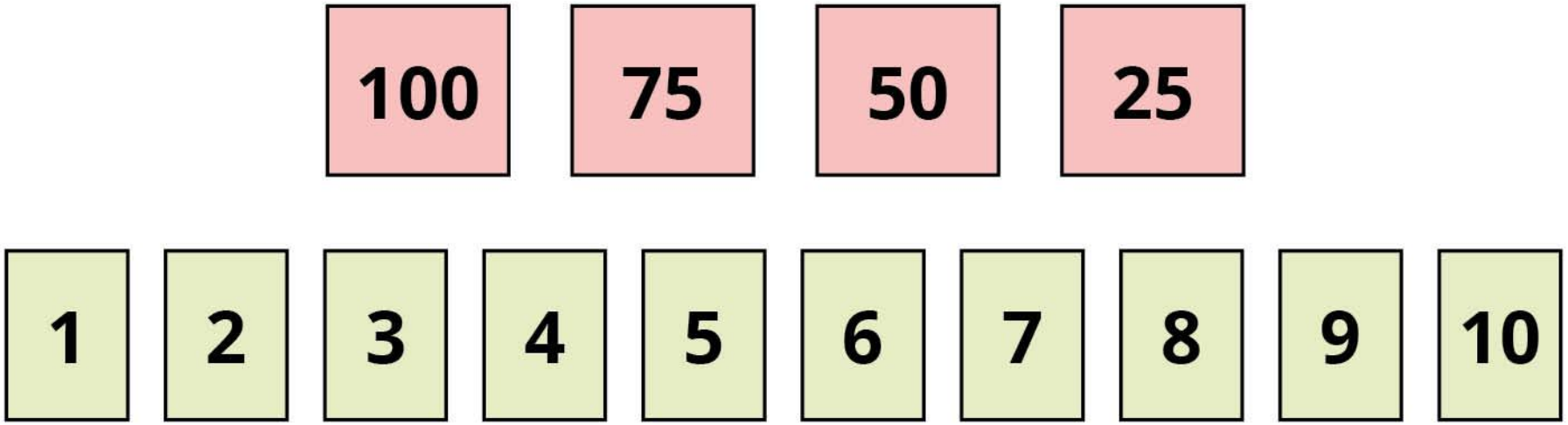
How much will 600 bottles of water cost?



Use the digits and symbols to write as many calculations as you can that give different answers.

Is it possible to make every number from zero to 20?

Here are some number cards.



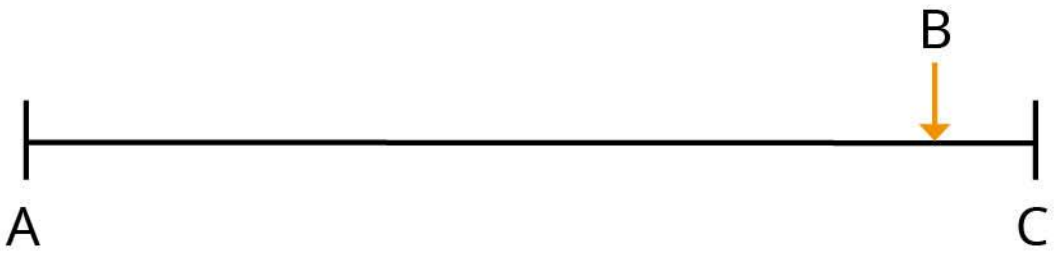
Pick **one** large number from the top row.

Pick **five** smaller numbers from the bottom row.

Use a calculator or computer to generate a 3-digit target number.

Use your numbers, the four operations and brackets to find a number as close as possible to the target number.

Here is a number line.



Estimate the number shown by arrow B for these values of A and C:

- A = 0 and C = 1,000
- A = 30 and C = 230
- A = 7 and C = 33
- A = 1 and C = 2
- A = 1,000 and C = 100,000

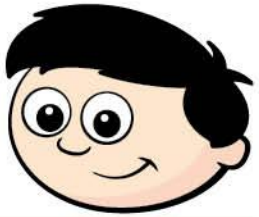
2,000 – 1,287

Here are three strategies for working out the subtraction.

Whitney

I will use the column method.

I will use number bonds from 87 to 100, then from 1,300 to 2,000



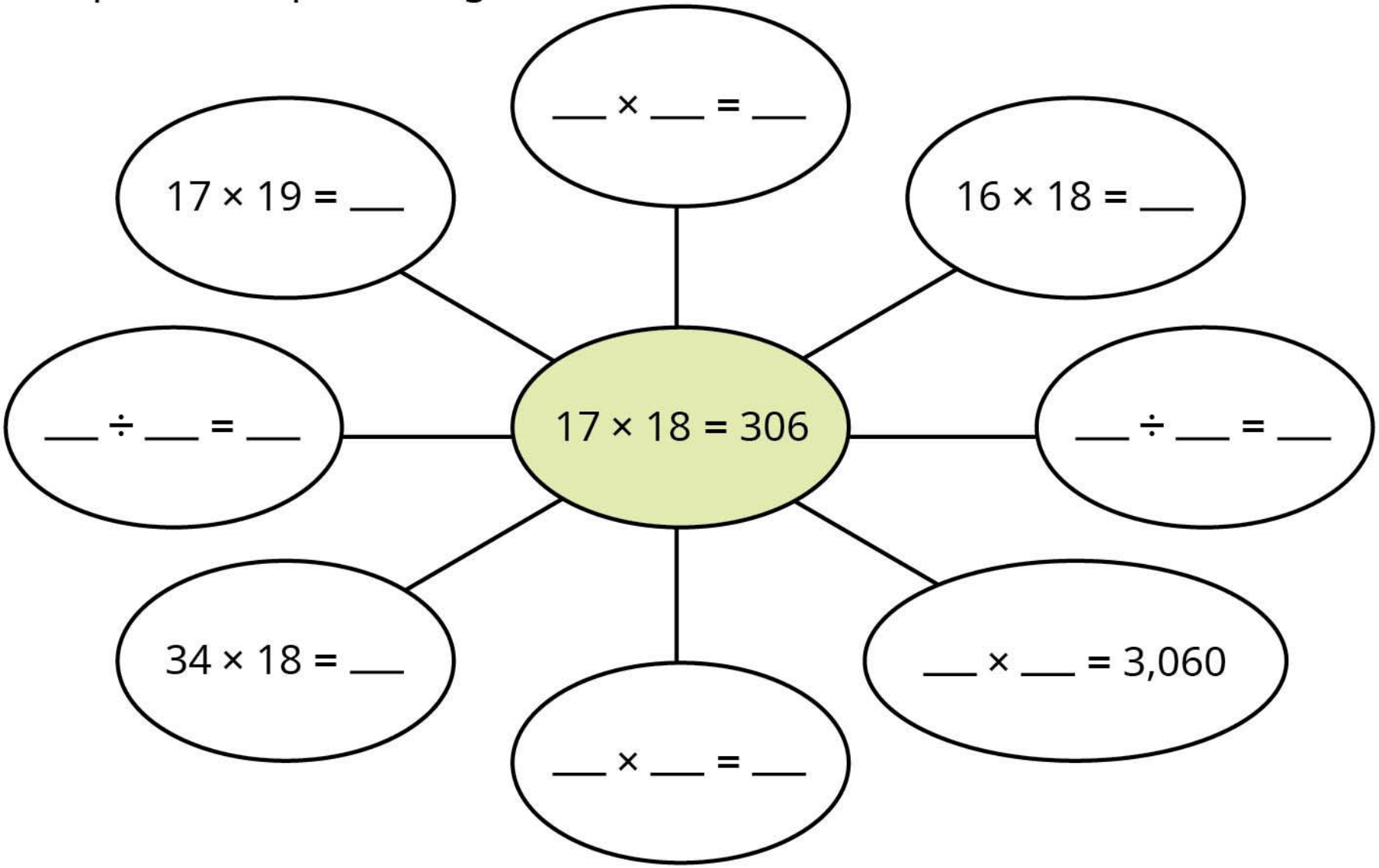
Dexter

Teddy

I will subtract one from each number and then use the column method.

Whose strategy is most efficient?

Complete the spider diagram.



Compare methods with a partner.

Without working them out, which calculation has the greater answer?

57×23	56×24

Draw a diagram to explain how you know.