White Rose Maths

Year 4 - Spring - Block 1

Multiplication & Division

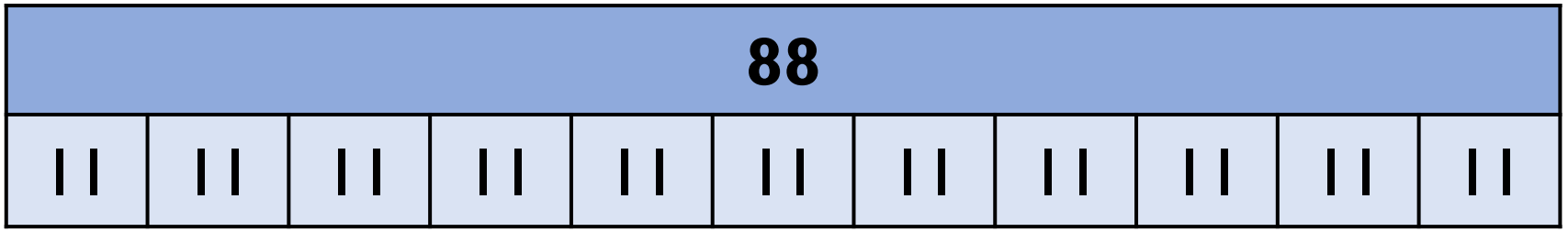
Here is one batch of muffins.



Teddy bakes 11 batches of muffins.
How many muffins does he have altogether?
In each batch there are 3 strawberry, 3 vanilla, 4 chocolate and 2 toffee muffins.
How many of each type of muffin does Teddy have in 11 batches?
Teddy sells 5 batches of muffins.
How many muffins does he have left?

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Rosie uses a bar model to represent 88 divided by 11

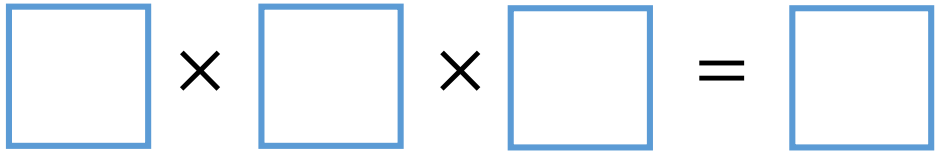


Explain Rosie's mistake.

Can you draw a bar model to represent 88 divided by 11 correctly?

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Choose three digit cards.
Arrange them in the calculation.



How many different calculations can you make using your three digit cards?
Which order do you find it the most efficient to calculate the product?
How have you grouped the numbers?

0	1	2	3	4	5	6	7	8	9

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Make the target number of 84 using three of the digits below.

7	5	3	4	6	2

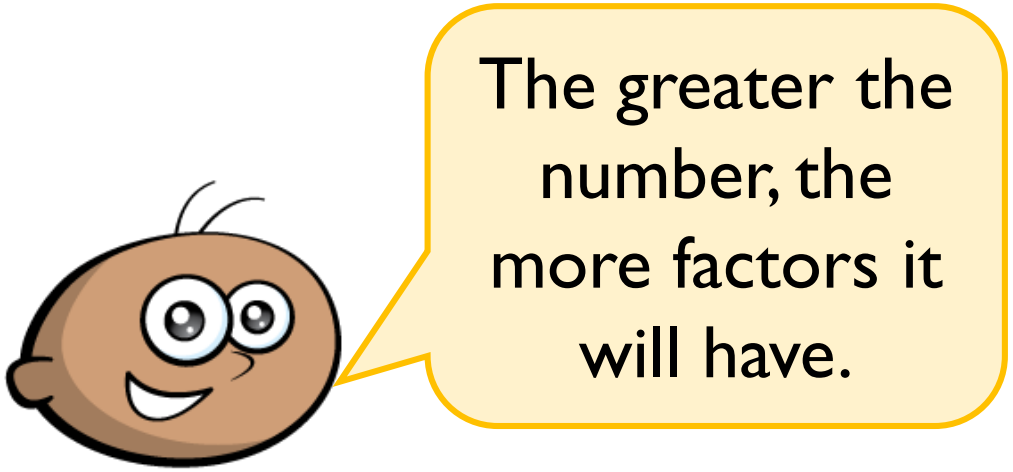
$\square \times \square \times \square = 84$

Multiply the remaining three digits together, what is the product of the three numbers?

Is the product smaller or larger than 84?
Can you complete this problem in more than one way?

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Tommy says,



Is Tommy correct?

Use arrays to explain your answer.

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Some numbers are equal to the sum of all their factors (not including the number itself).

e.g. 6

6 has 4 factors, 1, 2, 3 and 6

Add up all the factors not including 6 itself.

$1 + 2 + 3 = 6$

6 is equal to the sum of its factors (not including the number itself).

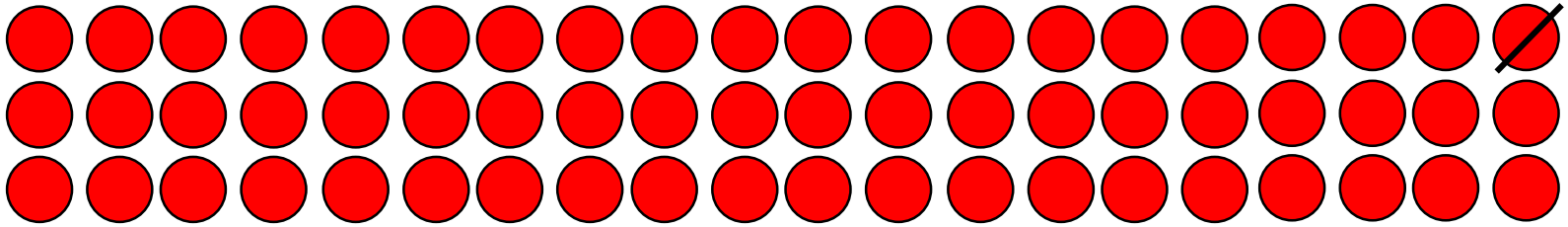
How many other numbers can you find that are equal to the sum of their factors?

Which numbers are less than the sum of their factors?

Which numbers are greater than the sum of their factors?

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Teddy has calculated 19×3



$20 \times 3 = 60$

$60 - 1 = 59$

$19 \times 3 = 59$

Can you explain his mistake and correct the diagram?

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Here are three number cards.

21	42	38

Dora, Annie and Eva choose one of the number cards each.
They multiply their number by 5

Dora says,



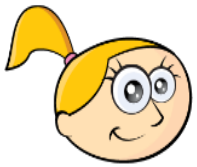
I did 40 × 5 and then subtracted 2 lots of five.

I multiplied my number by 10 and then divided 210 by 2



Annie says,

Eva says,



I halved my 2-digit number and doubled 5 so I calculated 21 × 10

Which number card did each child have? Would you have used a different method to multiply the numbers by 5?

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Here are 6 multiplications.

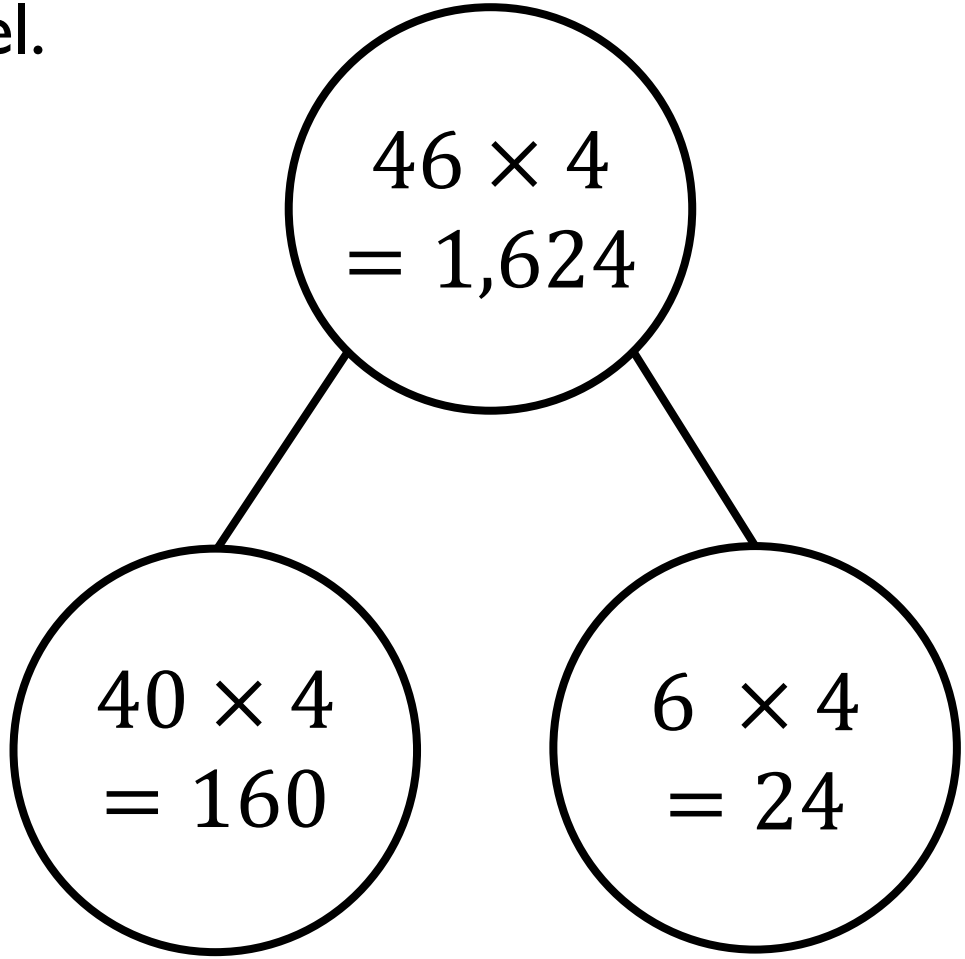
43×5	54×6	38×6
33×2	19×7	84×5

Which of the multiplications would you calculate mentally?
Which of the multiplications would you use a written method for?

Explain your choices to a partner.
Did your partner choose the same methods as you?

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Ron is calculating 46 multiplied by 4 using the part-whole model.



Can you explain Ron's mistake?

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Here are three incorrect multiplications.

	T	O
	6	1
×		5
	3	5

	T	O
	2	6
×		4
8	2	4

	T	O
	7	4
×		7
4	9	8

Correct the multiplications.

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Spot the mistake

Alex and Dexter have both completed the same multiplication.



	H	T	O
	2	3	4
×			6
1	2	0	4

2 2



	H	T	O
	2	3	4
×			6
1	4	0	4

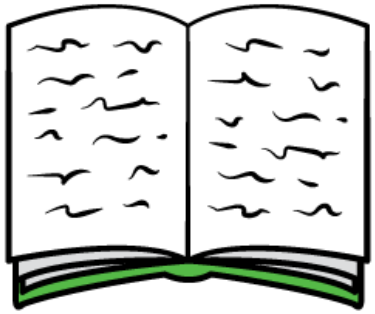
2 2

Who has the correct answer?

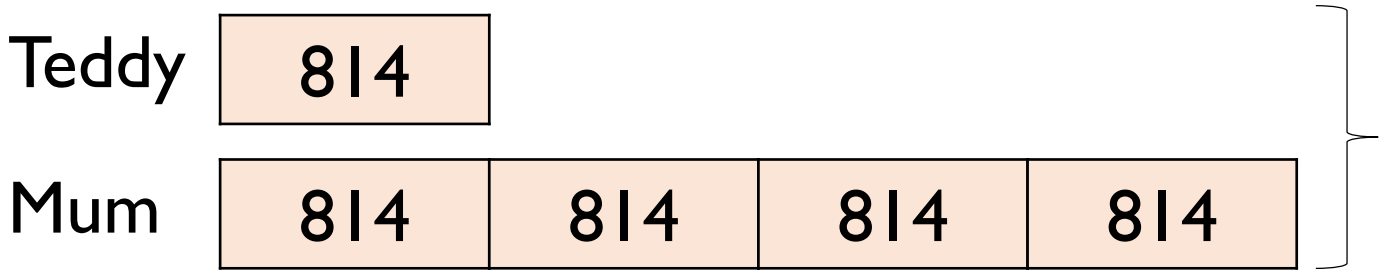
What mistake has been made by one of the children?

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Teddy and his mum were having a reading competition.
In one month, Teddy read 814 pages.



His mum read 4 times as many pages as Teddy.
How many pages did they read altogether?
How many fewer pages did Teddy read?
Use the bar model to help.



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Dora is calculating $72 \div 3$
Before she starts, she says the calculation will involve an exchange.

Do you agree?
Explain why.

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Use $<$, $>$ or $=$ to complete the statements.

$69 \div 3$ ◯ $96 \div 3$

$96 \div 4$ ◯ $96 \div 3$

$91 \div 7$ ◯ $84 \div 6$

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Eva has 96 sweets.

She shares them into equal groups.

She has no sweets left over.

How many groups could Eva have shared her sweets into?

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Rosie writes,

$85 \div 3 = 28$ r 1

She says 85 must be 1 away from a multiple of 3
Do you agree?

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37 sweets are shared between 4 friends. How many sweets are left over?

Four children attempt to solve this problem.

- Alex says it's 1
- Mo says it's 9
- Eva says it's 9 r 1
- Jack says it's 8 r 5

Can you explain who is correct and the mistakes other people have made?

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Whitney is thinking of a 2-digit number that is less than 50

When it is divided by 2, there is no remainder.

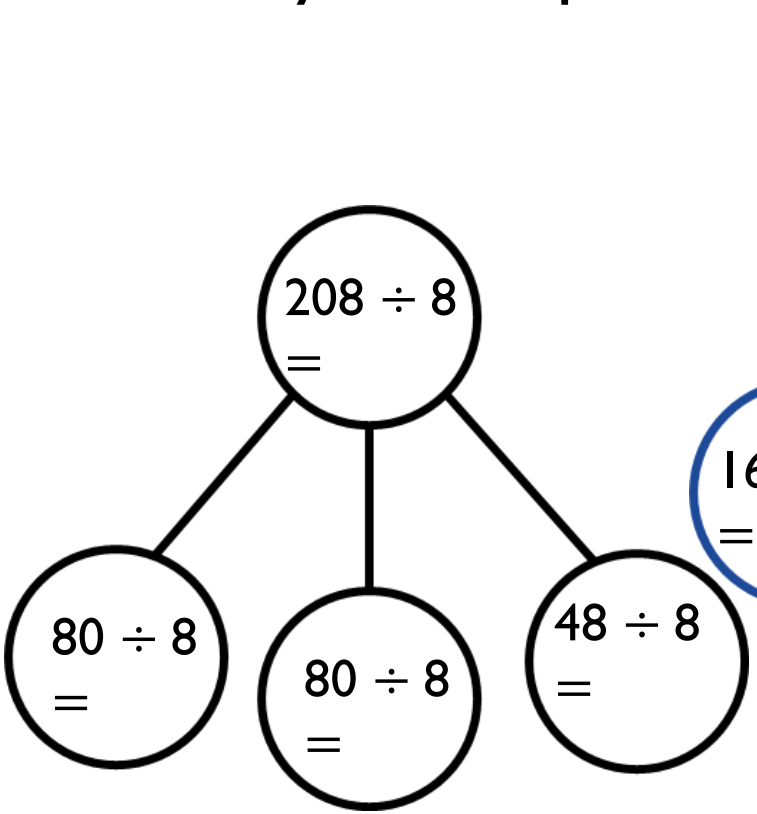
When it is divided by 3, there is a remainder of 1

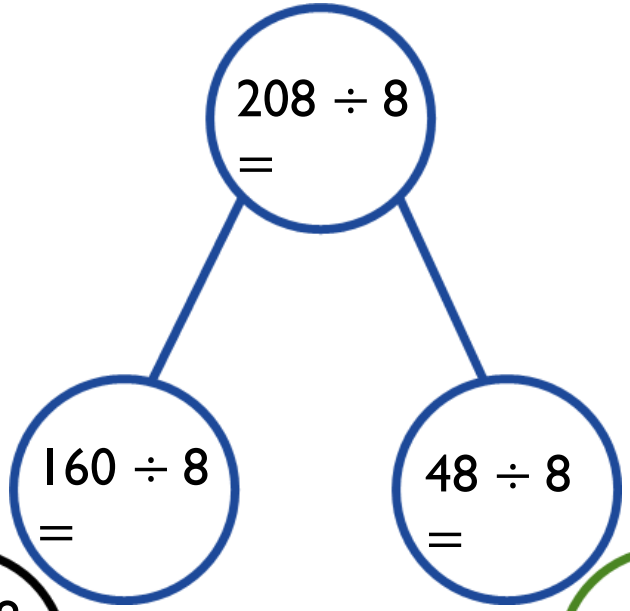
When it is divided by 5, there is a remainder of 3

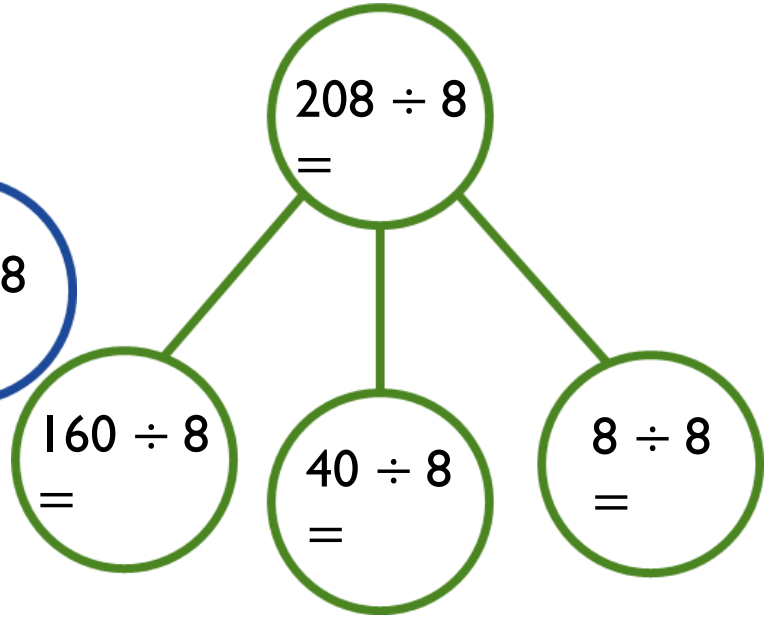
What number is Whitney thinking of?

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Dexter is calculating 184 ÷ 8 using part-whole models.
Can you complete each model?





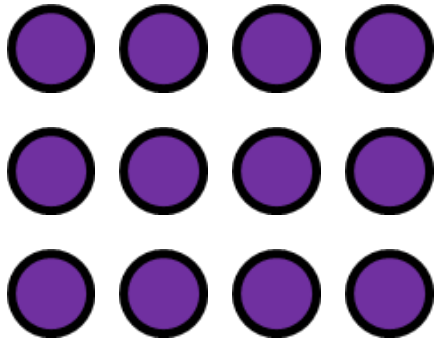


How many part-whole models can you make to calculate 132 ÷ 4?

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You have 12 counters and the place value grid. You must use all 12 counters to complete the following.

Hundreds	Tens	Ones



Create a 3-digit number divisible by 2
Create a 3-digit number divisible by 3
Create a 3-digit number divisible by 4
Create a 3-digit number divisible by 5
Can you find a 3-digit number divisible by 6, 7, 8 or 9?

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Here are the meal choices in the school canteen.

Starter	Main	Dessert
Soup	Pasta	Cake
Garlic Bread	Chicken	Ice-cream
	Beef	Fruit
	Salad	Salad

There are 2 choices of starter, 4 choices of main and 3 choices of dessert.

How many meal combinations can you find? Can you use a systematic approach?

Can you represent the combinations in a multiplication?

If there were 20 meal combinations, how many starters, mains and desserts might there be?

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Alex has 6 T-shirts and 4 pairs of shorts.
Dexter has 12 T-shirts and 2 pairs of shorts.

Who has the most combinations of T-shirts and shorts?

Explain your answer.

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