Answers

1) 2 × 3 = 6 3 × 2 × 3 = 3 × 6 = **18** 2 × 3 = 6 2 × 3 = 6 $4 \times 6 = 24$ $2 \times 4 \times 6 = 2 \times 24 = 48$ $4 \times 6 = 24$ 2) 5 × 7 × 2 = 70 10 × 3 × 1= **30** 8 × 3 × 2 = 48 $S \times 4 \times 5 = 100$ 3 × 10 × **6** = 180 2 × **9** × 10 = 180 3) Draw It! Children will draw an image of 5 boxes of eggs with 2 rows of 6 or an image that represents $5 \times 2 \times 6 = 60$ such as an array. Record It! $5 \times 2 \times 6 = 60$

1) This is always true. Multiplication is commutative. Three factors multiplied together will always give the same product, no matter which order they are multiplied in.

 $4 \times 5 \times 1 = 20$ (2 × 5 × 3 = 30) 2 × 5 × 2 = 20

2) 1 × 10 × 2 = 20

 $2 \times 5 \times 3$ is the odd one out because it equals 30, while the other calculations equal 20.

3) Tania and Lola are correct. One has represented the calculation with a number statement while the other has represented it using manipulatives. Both give the correct answer of 100. Todd is incorrect because he added the 2 to the product of 10 × 5 rather than multiplying it by 2, which gave him an incorrect answer of 52.

 1) 3×5×3=45
 3×3×5=45
 5×3×3=45

 9×5×1=45
 5×9×1=45
 1×5×9=45

 9×1×5=45
 5×1×9=45
 1×9×5=45

2) Possible answers:

2	10	4	s	4	4	8	10	1	2	s	8
4	2	10	4	5	4	1	8	10	8	2	S
10	4	2	4	4	s	10	1	8	5	8	2





Answers



1) a) 36 ÷ 6

 (2×6) 1 × 6 60 ÷ 10



b) 2 × 6 is the odd one out because it equals 12. All the other calculations equal 6.

- 2) This is always true. 6 is an even number so when you multiply it by an even or an odd number, the answer will always be even.
- 3) The images have been sorted based on the multiplication fact that they represent. The first group has models and images that show $7 \times 6 = 42$ and the second group has models and images that depict $9 \times 6 = 54$.



.) α)	Clue	Child	Number
	The sum of my digits is 6. One of my digits is a 2.		24
	I have one ten.		18
	I am 12 more than the answer to 10 x 6.	All	72
	I am a multiple of 6 and a multiple of 7.		42
	I am double 6.		12
	I have 4 ones. I have more tens than I do ones.		54
	I have no tens.		6

b) The missing multiples are 30, 36, 48, 60 and 66.

c) Answers will vary. Accept any clearly and sensibly written clues. Example clue: it has two digits that are the same. (66)



Answers



- b) 4 × 7 = 28 so 28 pencils are given away to the four classes. If you subtract the 28 pencils from the 84 pencils in a box, then there will be 56 pencils remaining.
- 2) The numbers that are opposite each other in each segment are pairs of multiplication facts from the 7 times table, e.g. 2 and 14 are $2 \times 7 = 14$.





1)	There are 2 lots There are 2 nine 2 × 9 = 18	of 9. s.)
2)	There are 6 l	ots of 9.	4 × 9 =	36	There	e are 9 nines.	
	Children will draw an rows of nine that has	n array with six s a total of 54.	Children will draw an a rows of nine that has a	nray with four a total of 36.	Children will d rows of nine t	lraw an array with nine hat has a total of 81.	
3)	$12 \times 9 = 108$ $9 \times 12 = 108$						
	$\begin{bmatrix} 108 \\ \div \\ 9 \end{bmatrix} = \begin{bmatrix} 12 \\ 12 \end{bmatrix}$ $\begin{bmatrix} 108 \\ \div \\ 12 \end{bmatrix} = \begin{bmatrix} 9 \\ 9 \end{bmatrix}$						
4)	9 × 8 = 72	10 × 9 = 90	1 × 9 = 9	99 =	11 × 9	63 = 7 × 9	
	36 ÷ 9 = 4	45 ÷ S = 9	81 ÷ 9 = 9	9 = 18	' ÷ 2	3 = 27 ÷ 9	
5)	9 × 8 = 72						

1)
$$5 \times 9 = 45 \checkmark \quad 45 \div 9 = 5 \checkmark$$
$$9 \times 5 = 45 \checkmark \quad 5 \div 45 = 9 \checkmark$$

Anita is incorrect in this fact because she has written the numbers in the wrong order. In a division calculation, the largest number (dividend) must be at the start of the calculation. The correct answer is $45 \div 5 = 9$.

2) Diego's statement is false because 18, 36, 54, 72, 90 and 108 are all multiples of 9 and they are even.

Louisa's statement is correct because 9 divided by 3 equals 3. Therefore, all multiples of 9 are also multiples of 3 because they are divisible by 3.

3) The tens digit is increasing by one each time while the ones digit is decreasing by one.

Also, the sum of the digits for each multiple is 9.







1) Complete the calculations to match the arrays.



- 2) Use your knowledge of number facts to solve the calculations.
 - **α)** 5 × 7 × 2 = ____
 - **b)** 10 × 3 × 1= ____
 - **c)** 8 × 3 × 2 = ____
 - **d)** ____ × 4 × 5 = 100
 - e) 3 × 10 × ___ = 180
 - **f)** 2 × ____ × 10 = 180
- 3) Solve this word problem. Draw a picture and write a multiplication calculation to match it.

Amal bought 5 boxes of eggs. Each box of eggs was organised into 2 rows of 6. How many eggs did Amal have altogether?	Draw It!
	Record It!



1)	Read the statement below. Is it always, sometimes or never true? Explain your reasoning. Multiplying 3 numbers can be done in any order.
2)	Look at the calculations below. Which is the odd one out and why? 1 × 10 × 2 = 4 × 5 × 1 = 2 × 5 × 3 = 2 × 5 × 2 =
3)	Carly is completing the calculation 10 multiplied by 5 multiplied by 2. She has got a little stuck and has asked her friends for help. Who is correct? Who is incorrect? 10 × 5 × 2 = 100 Lola Lola Tania 10 × 5 + 2 = 52 Tania
1)	Todd Todd If the product is 45, what could the calculation be if each factor has one digit? Find all possibilities. x = 45 Image: Second colspan="2">Image: Second colspan="2">Image: Second colspan="2">Todd Image: Second colspan="2">Image: Second colspan="2">Image: Second colspan="2">Image: Second colspan="2">Todd Image: Second colspan="2">Image: Second colspan="2" Image: Second
2)	Write a digit in each square of the grid so that, when the three numbers in each row or each column are multiplied together, the product is always 80. You may use each digit as many times as you like and may repeat it more than once in each grid. Find three possible solutions. 8 4 2 5 10 1



1)	Complete the sentences about the picture.	
	There are lots of candles.	There were candles altogether.
	There are candles in total.	They were shared between cakes.
	× _ = _	Now there are candles on each cake.
2)	Write a fact family of four calculations to ma	tch this array.
3)	 a) There are 8 flowerpots. Each flowerpot h b) Draw a picture to represent this word pro- 	as 6 flowers growing inside it. What is the total number of flowers?
	c) Write a multiplication calculation that n	natches the problem.
4)	 a) 66 ÷ 6 = b) Write a word problem to match this divis 	sion fact.



1)	α)	Look at the calculations below and circle the odd one out.



- 36 ÷ 6 2 × 6 1 × 6 60 ÷ 10
- **b)** Explain how you know it is the odd one out.
- 2) Read the statement below. Is it always, sometimes or never true? Explain your reasoning.



3) Look at the models and images in the two groups below. Can you explain why they have been sorted into these groups?





1) a) Each child has a different number from the six times table. Use the clues to find each child's number.

Clue	Child	Number
The sum of my digits is 6. One of my digits is a 2.		
I have one ten.		
I am 12 more than the answer to 10 x 6.		
I am a multiple of 6 and a multiple of 7.		
I am double 6.		
I have 4 ones. I have more tens than I do ones.		
I have no tens.		

b) Which multiples from the six times table are missing from the table above?

c) Write a clue about each multiple you found in question b. Make sure each clue you write is specific enough that there is only one possible answer.

Can your partner solve the clues you have written?







1)	Charlie is writing out the related fact families for the 7 times table. I × 7 = 7 I × 7 = 7 I × 7 = 7 I + 7 = 7 I + 7 = 7 I + 7 = 7 I + 7 = 7 I + 7 = 1
2)	Mia is investigating this statement for numbers below 100. If you add the digits of a number together and they make 7 then that number must be in the 7 times table. Continue Mia's investigation to find out if this statement is always, sometimes or never true.
1)	 a) A teacher buys a box of pencils. There are 84 pencils in a box and 7 pencils in each of the packets in the box. How many packets of pencils are there in a box? b) The teacher gives one packet of pencils to each of the four classes in school. How many pencils are left in the box?
2)	Which number is missing from each segment of the circles?
3)	Use the model to create your own puzzle like the ones above using multiplication and division facts from the 7 times table. Ask a friend to complete it.





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1) Anita has written out the fact family for 5 × 9. Check her work and then correct and explain any mistakes she has made. $5 \times 9 = 45$ $45 \div 9 = 5$ 9 × 5 = 45 $5 \div 45 = 9$ 2) Read the statements below. Whose is true and whose is false? Explain your answer. The multiples in the 9 times table Multiples of 9 are also multiples of 3. are always odd because 9 is an odd number. Diego Louisa 3) Look at the multiples of 9. Explain what patterns you can see.



1) a) Crack the code for the safe. Find the numbers for the combination of the safe by reading the clues below and matching them to the correct multiples from the 9 times table. It may be helpful to write down the multiples of the 9 times table in order to help you work it out. Each multiple of 9 only appears once. When the digits It is a number This multiple is It is a multiple This multiple is of this number half of 8 × 9. between 10 of 5 and 9. an even two-digit are multiplied, it and 50. It is a number with a makes 20. multiple of 3 but placeholder. not of 6. b) Choose some of the remaining multiples from the 9 times table that were not the answers from the question above. Then, write clues for a partner to solve so that they can crack the code and open the safe. Clues Answer





 If the product is 45, what could the calculation be if each factor has one digit?
 Find all possibilities.



- × × = 45
- 2) Write a digit in each square of the grid so that, when the three numbers in each row or each column are multiplied together, the product is always 80. You may use each digit as many times as you like and may repeat it more than once in each grid.

Find three possible solutions.



 If the product is 45, what could the calculation be if each factor has one digit?
 Find all possibilities.



2) Write a digit in each square of the grid so that, when the three numbers in each row or each column are multiplied together, the product is always 80. You may use each digit as many times as you like and may repeat it more than once in each grid.

Find three possible solutions.





1) Complete the sentences about the picture.	1) Complete the sentences about the picture.
There are lots of candles.	There are lots of candles.
There are candles in total.	There are candles in total.
I nere were canales altogether.	I nere were canales altogether.
They were shared between cakes.	They were shared between cakes.
Now there are candles on each cake.	Now there are candles on each cake.
 Write a fact family of four calculations to match this array. 	2) Write a fact family of four calculations to match this array.
÷ = =	
3) a) There are 8 flowerpots. Each flowerpot has 6 flowers growing inside it. What is the total number of flowers?	3) a) There are 8 flowerpots. Each flowerpot has 6 flowers growing inside it. What is the total number of flowers?
b) Draw a picture to represent this word problem.	b) Draw a picture to represent this word problem.
c) Write a multiplication calculation that matches the problem.	c) Write a multiplication calculation that matches the problem.
4) a) 66 ÷ 6 =	4) a) 66 ÷ 6 =
b) Write a word problem to match this division fact.	b) Write a word problem to match this division fact.

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 a) Look at the calculations below and circle the odd one out.



- 36 ÷ 6 2 × 6 1 × 6 60 ÷ 10
 - **b)** Explain how you know it is the odd one out.
- **2)** Read the statement below. Is it always, sometimes or never true? Explain your reasoning.



Multiples of 6 are always even.

3) Look at the models and images in the two groups below. Can you explain why they have been sorted into these groups?



REGENT STUDIES Focused education on life's walk! www.regentstudies.com a) Look at the calculations below and circle the odd one out.



- 36 ÷ 6 2 × 6 1 × 6 60 ÷ 10
 - **b)** Explain how you know it is the odd one out.
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•) a) Each child has a different number from the six times table. Use the clues to find each child's number.					
Clue	Child	Number			
The sum of my digits is 6. One of my digits is a 2.					
I have one ten.					
I am 12 more than the answer to 10 x 6.					
I am a multiple of 6 and a multiple of 7.					
I am double 6.					
I have 4 ones. I have more tens than I do ones.					
I have no tens.					

- **b)** Which multiples from the six times table are missing from the table above?
- c) Write a clue about each multiple you found in question b. Make sure each clue you write is specific enough that there is only one possible answer.

Can your partner solve the clues you have written?

1	.) a) Each child has a differ from the six times tab to find each child's nu	rent number le. Use the clu .mber.	les
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a) A teacher buys a box of pencils. There are 84 pencils in a box and 7 pencils in each of the packets in the box. How many packets of pencils are there in a box?



- b) The teacher gives one packet of pencils to each of the four classes in school. How many pencils are left in the box?
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3) Use the model to create your own puzzle like the ones above using multiplication and division facts from the 7 times table. Ask a friend to complete it.



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3) Use the model to create your own puzzle like the ones above using multiplication and division facts from the 7 times table. Ask a friend to complete it.







5) Solve this word problem.

The shopkeeper ordered 9 bags of apples. Each bag contained 8 apples. What is the total amount of apples the shopkeeper has ordered?







 Anita has written out the fact family for 5 × 9. Check her work and then correct and explain any mistakes she has made.



 $5 \times 9 = 45$ $45 \div 9 = 5$ $9 \times 5 = 45$ $5 \div 45 = 9$



2) Read the statements below. Whose is true and whose is false? Explain your answer.

The multiples in the 9 times table are always odd because 9 is an odd number.



Multiples of 9 are also multiples of 3.



multiples of 3.

Louisa

3) Look at the multiples of 9. Explain what patterns you can see.

	9	
1	8	
2	7	
3	6	
4	5	
5	4	
6	3	
7	2	
8	1	
9	0	
9	9	
10	8	



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5 \times 9 = 45 45 \div 9 = 5
9 \times 5 = 45 5 \div 45 = 9
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1	8		
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5	4		
6	3		
7	2		
8	1		
9	0		
9	9		
10	8		



1) a) Crack the code for the safe.

Find the numbers for the combination of the safe by reading the clues below and matching them to the correct multiples



from the 9 times table. It may be helpful to write down the multiples of the 9 times table in order to help you work it out. Each multiple of 9 only appears once.



b) Choose some of the remaining multiples from the 9 times table that were not the answers from the question above. Then, write clues for a partner to solve so that they can crack the code and open the safe.



1) a) Crack the code for the safe.

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