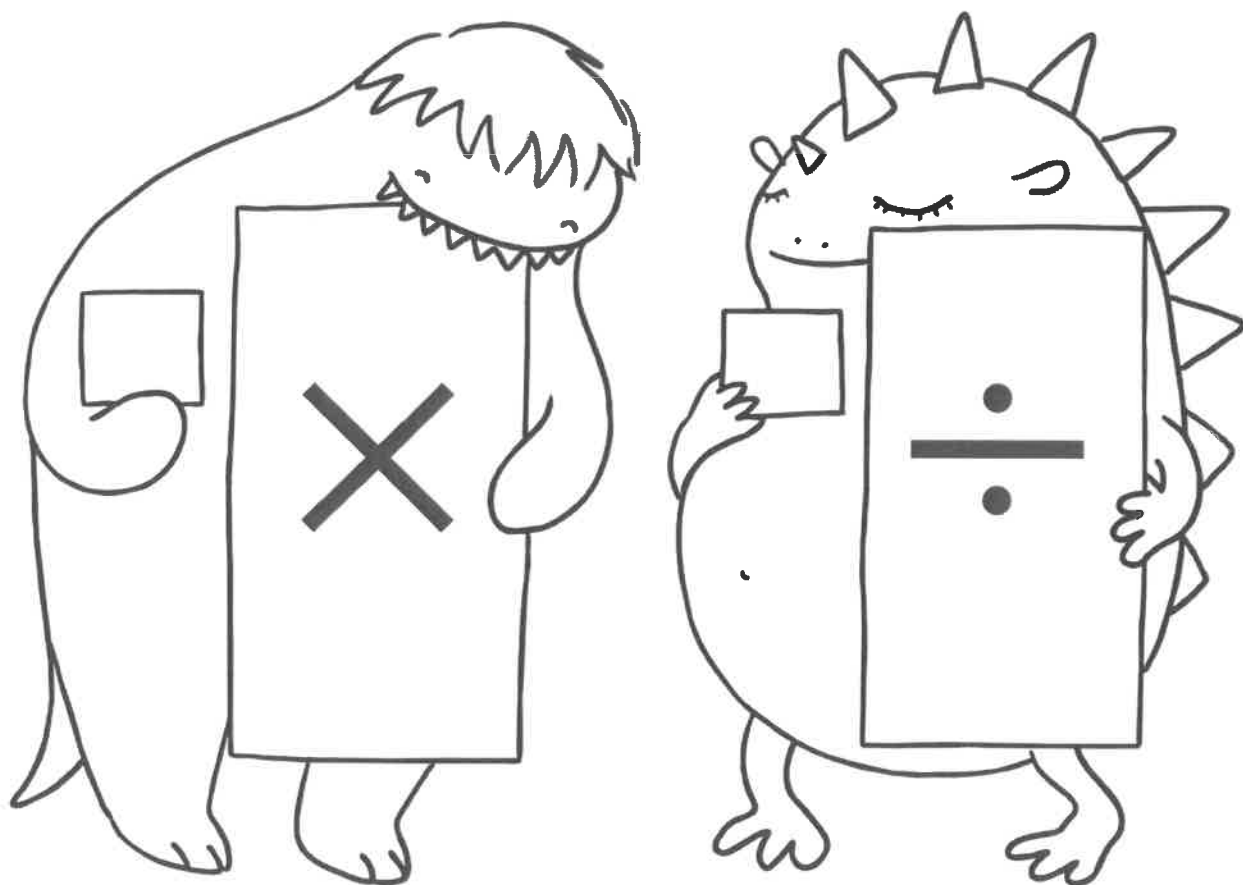


# Maths

## Multiplication and Division



Workbook





# Year 3 Maths:

## Workbook Pack

### Year 3 Programme of Study: Multiplication and Division

Statutory Requirements	Worksheet	Page Number	Notes
Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.	Multiplication 4 times tables word search	3	
	Multiplication 3 times tables word search	4	
	Multiplication 8 times tables word search	5	
	Dividing by 3 race	6	
	Dividing by 4 race	7	
	Dividing by 8 race	8	
	Tables at the Double	9	
	Multiplication triangles activity sheet 3, 4 and 8 times tables	10 - 11	
Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.	Mental Multiplication	12	
	Multiplying 2-digit numbers by 1-digit numbers using grid method	13	
	New bus stop method formal division of 2-digit numbers	14	
	Division using a numberline	15 - 17	
Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which $n$ objects are connected to $m$ objects.	I'm thinking of a number	18 - 19	
	Deriving multiplication facts	20	
	Multiplication and division missing numbers	21 - 24	
	Scaling problems	25 - 26	
	Colour the division equation	27	



# Word Search 4 Times table

Answer the calculations below and find the answers in the word search:

$4 \times 3 =$

$4 \times 4 =$

$4 \times 11 =$

$4 \times 8 =$

$4 \times 10 =$

$4 \times 2 =$

f	t	h	i	r	t	y	t	w	o
t	o	h	f	o	r	t	y	w	o
w	t	r	s	i	x	e	e	t	e
e	w	r	t	e	s	e	s	h	i
l	s	e	l	y	n	l	h	i	g
v	k	i	e	t	f	e	e	r	h
e	a	e	y	e	a	o	t	t	t
f	o	r	t	e	o	o	u	y	e
o	n	n	e	e	t	h	g	r	e
s	i	x	t	e	e	n	b	n	n



# Word Search 3 Times table

Answer the calculations below and find the answers in the word search:

$3 \times 3 =$

$3 \times 4 =$

$3 \times 10 =$

$3 \times 6 =$

$3 \times 2 =$

$3 \times 7 =$

e	t	h	i	r	t	y	n	e	l
t	n	h	x	t	t	e	r	t	o
w	i	u	e	d	b	i	w	n	e
e	n	r	w	e	s	e	e	o	s
l	e	e	l	p	n	e	h	u	i
v	k	e	e	t	t	i	e	r	x
e	a	e	y	h	a	u	t	n	e
m	q	o	g	e	o	o	k	i	e
o	n	i	e	e	t	h	g	n	e
e	e	d	j	p	z	o	b	n	n





# Word Search 8 Times table

Answer the calculations below and find the answers in the word search:

$5 \times 8 =$

$8 \times 7 =$

$8 \times 3 =$

$4 \times 8 =$

$8 \times 10 =$

$8 \times 2 =$

t	o	e	v	e	n	e	y	i	e
h	w	h	t	w	e	i	v	e	f
i	t	e	e	d	b	g	n	o	i
r	y	e	n	e	s	h	r	h	f
t	t	e	e	t	y	t	e	i	t
y	r	i	r	t	y	y	e	r	y
t	i	y	t	r	o	f	t	t	s
w	h	e	w	u	o	u	o	y	i
o	t	o	o	e	t	e	o	u	x
e	s	i	x	t	e	e	n	n	r



# Division by 3 Race



**Division Race**

Take the number in the circle below and divide the numbers on the outside of the track by it. Write your answers as you go and see how long it takes you to finish the race!

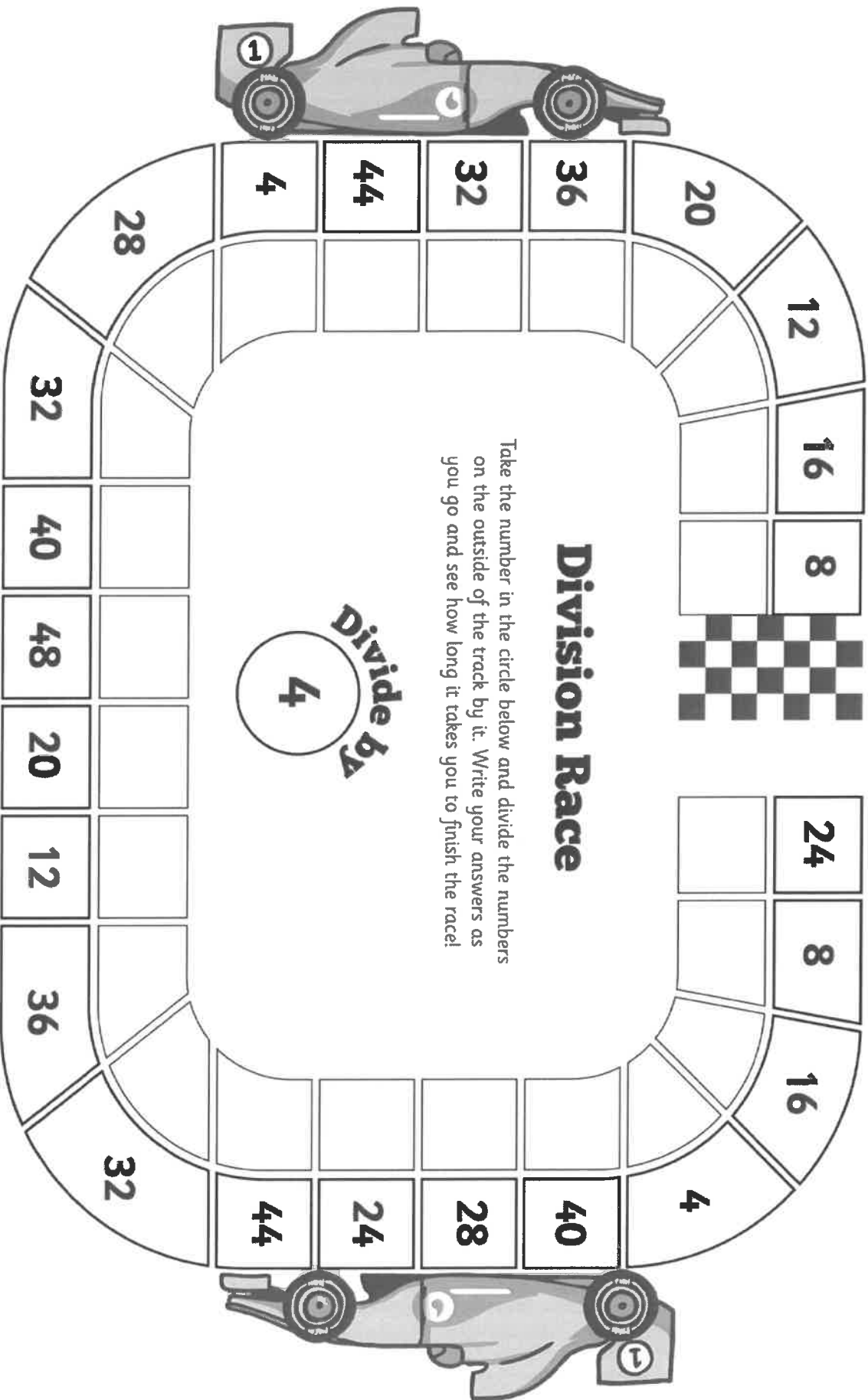
Divide by 3

30	33	18	3	21	6	12	9	24	15	27	36	30	33	18	3	21	6	12	9	24	15	27	36
----	----	----	---	----	---	----	---	----	----	----	----	----	----	----	---	----	---	----	---	----	----	----	----



# Division by 4 Race

**Start** 



**Division Race**

Take the number in the circle below and divide the numbers on the outside of the track by it. Write your answers as you go and see how long it takes you to finish the race!

**Divide by 4**

4

20	12	16	8	24	8	16	4
36							40
32							28
44							24
4							44
28							32
32							36
40							
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48							
20</							



# Division by 8 Race



**Division Race**

Take the number in the circle below and divide the numbers on the outside of the track by it. Write your answers as you go and see how long it takes you to finish the race!

**Divide by 8**

40	96	56	48	24	16	24	88
80							64
72							40
8							80
32							32
64							
88							
16							
24							
48							
96							
72							
80							
88							





# Table at the Double

Find the 2x table by doubling each number. Find the 4x table by doubling the 2x table. Find the 8 times table by doubling the 4x table. Can you complete the whole sheet?

Number	x2	x4	x8
2	4	8	16
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
15			
20			
50			
100			



# Multiplication Triangles Sheet 1

Fill in the blanks in these multiplication triangles.

1.

$$\begin{array}{c} 80 \\ \div \quad \div \\ 8 \quad \times \quad \square \end{array}$$

2.

$$\begin{array}{c} \square \\ \div \quad \div \\ 4 \quad \times \quad 8 \end{array}$$

3.

$$\begin{array}{c} 12 \\ \div \quad \div \\ \square \quad \times \quad 3 \end{array}$$

4.

$$\begin{array}{c} 6 \\ \div \quad \div \\ 3 \quad \times \quad \square \end{array}$$

5.

$$\begin{array}{c} \square \\ \div \quad \div \\ 8 \quad \times \quad 2 \end{array}$$

6.

$$\begin{array}{c} 3 \\ \div \quad \div \\ \square \quad \times \quad 1 \end{array}$$

7.

$$\begin{array}{c} 20 \\ \div \quad \div \\ 4 \quad \times \quad \square \end{array}$$

8.

$$\begin{array}{c} \square \\ \div \quad \div \\ 4 \quad \times \quad 4 \end{array}$$

9.

$$\begin{array}{c} 24 \\ \div \quad \div \\ \square \quad \times \quad 3 \end{array}$$

10.

$$\begin{array}{c} 96 \\ \div \quad \div \\ 8 \quad \times \quad \square \end{array}$$

11.

$$\begin{array}{c} \square \\ \div \quad \div \\ 4 \quad \times \quad 7 \end{array}$$

12.

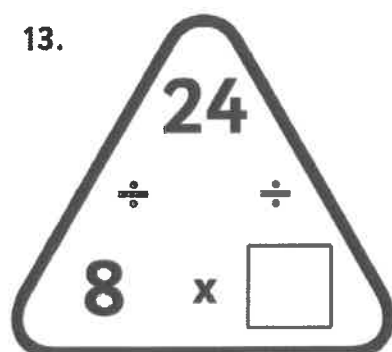
$$\begin{array}{c} 88 \\ \div \quad \div \\ \square \quad \times \quad 11 \end{array}$$



# Multiplication Triangles Sheet 2

Fill in the blanks in these multiplication triangles.

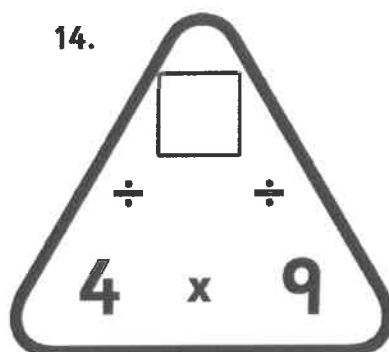
13.



A multiplication triangle with the number 24 at the top vertex. Below it are two division symbols (÷) with a blank space between them. At the bottom vertex, the number 8 is on the left, an 'x' symbol is in the middle, and a square box is on the right.

$$\begin{array}{c} 24 \\ \div \quad \div \\ 8 \quad x \quad \square \end{array}$$

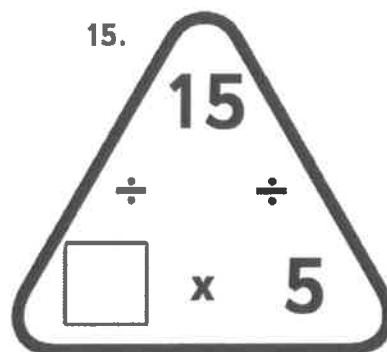
14.



A multiplication triangle with a square box at the top vertex. Below it are two division symbols (÷) with a blank space between them. At the bottom vertex, the number 4 is on the left, an 'x' symbol is in the middle, and the number 9 is on the right.

$$\begin{array}{c} \square \\ \div \quad \div \\ 4 \quad x \quad 9 \end{array}$$

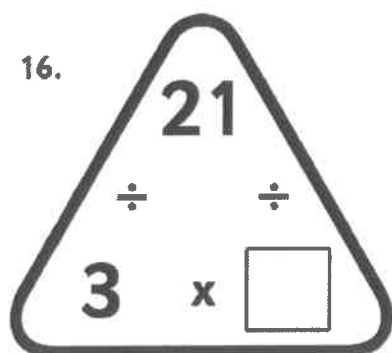
15.



A multiplication triangle with the number 15 at the top vertex. Below it are two division symbols (÷) with a blank space between them. At the bottom vertex, a square box is on the left, an 'x' symbol is in the middle, and the number 5 is on the right.

$$\begin{array}{c} 15 \\ \div \quad \div \\ \square \quad x \quad 5 \end{array}$$

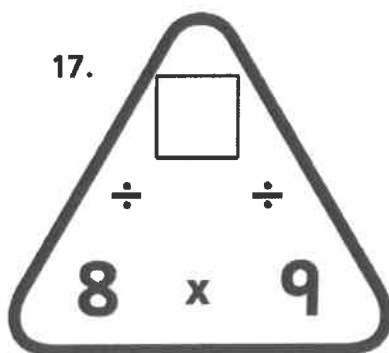
16.



A multiplication triangle with the number 21 at the top vertex. Below it are two division symbols (÷) with a blank space between them. At the bottom vertex, the number 3 is on the left, an 'x' symbol is in the middle, and a square box is on the right.

$$\begin{array}{c} 21 \\ \div \quad \div \\ 3 \quad x \quad \square \end{array}$$

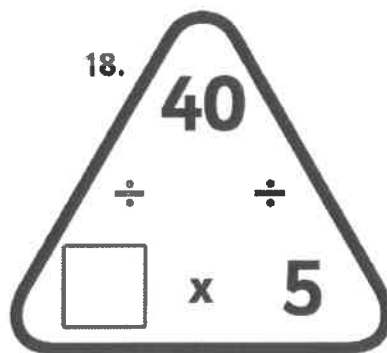
17.



A multiplication triangle with a square box at the top vertex. Below it are two division symbols (÷) with a blank space between them. At the bottom vertex, the number 8 is on the left, an 'x' symbol is in the middle, and the number 9 is on the right.

$$\begin{array}{c} \square \\ \div \quad \div \\ 8 \quad x \quad 9 \end{array}$$

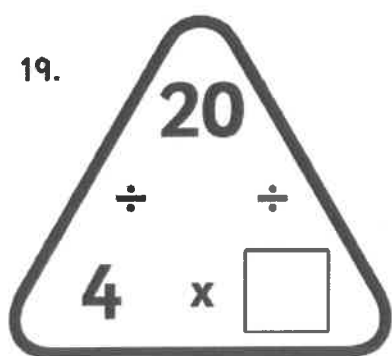
18.



A multiplication triangle with the number 40 at the top vertex. Below it are two division symbols (÷) with a blank space between them. At the bottom vertex, a square box is on the left, an 'x' symbol is in the middle, and the number 5 is on the right.

$$\begin{array}{c} 40 \\ \div \quad \div \\ \square \quad x \quad 5 \end{array}$$

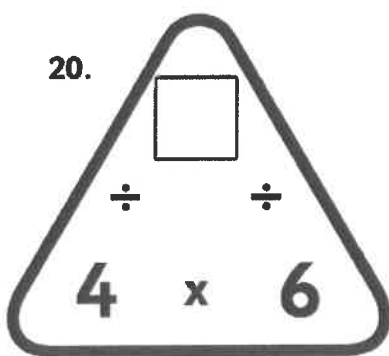
19.



A multiplication triangle with the number 20 at the top vertex. Below it are two division symbols (÷) with a blank space between them. At the bottom vertex, the number 4 is on the left, an 'x' symbol is in the middle, and a square box is on the right.

$$\begin{array}{c} 20 \\ \div \quad \div \\ 4 \quad x \quad \square \end{array}$$

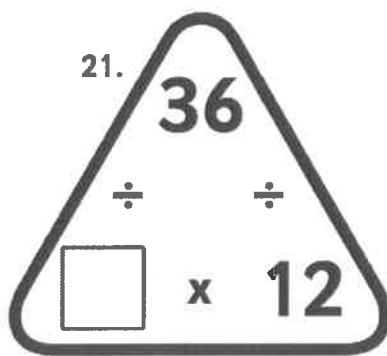
20.



A multiplication triangle with a square box at the top vertex. Below it are two division symbols (÷) with a blank space between them. At the bottom vertex, the number 4 is on the left, an 'x' symbol is in the middle, and the number 6 is on the right.

$$\begin{array}{c} \square \\ \div \quad \div \\ 4 \quad x \quad 6 \end{array}$$

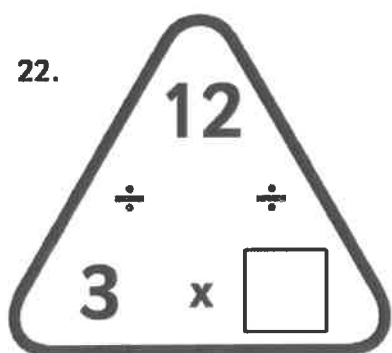
21.



A multiplication triangle with the number 36 at the top vertex. Below it are two division symbols (÷) with a blank space between them. At the bottom vertex, a square box is on the left, an 'x' symbol is in the middle, and the number 12 is on the right.

$$\begin{array}{c} 36 \\ \div \quad \div \\ \square \quad x \quad 12 \end{array}$$

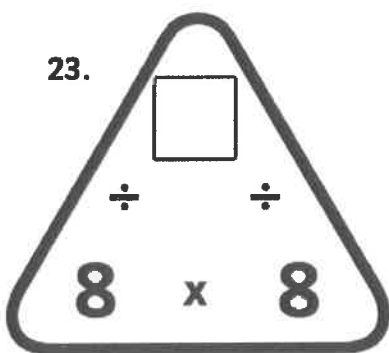
22.



A multiplication triangle with the number 12 at the top vertex. Below it are two division symbols (÷) with a blank space between them. At the bottom vertex, the number 3 is on the left, an 'x' symbol is in the middle, and a square box is on the right.

$$\begin{array}{c} 12 \\ \div \quad \div \\ 3 \quad x \quad \square \end{array}$$

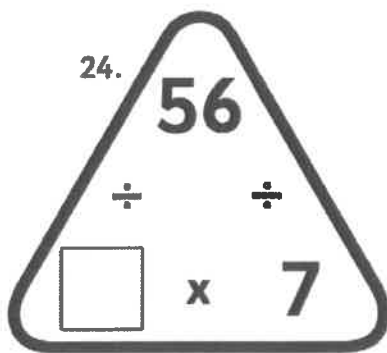
23.



A multiplication triangle with a square box at the top vertex. Below it are two division symbols (÷) with a blank space between them. At the bottom vertex, the number 8 is on the left, an 'x' symbol is in the middle, and the number 8 is on the right.

$$\begin{array}{c} \square \\ \div \quad \div \\ 8 \quad x \quad 8 \end{array}$$

24.



A multiplication triangle with the number 56 at the top vertex. Below it are two division symbols (÷) with a blank space between them. At the bottom vertex, a square box is on the left, an 'x' symbol is in the middle, and the number 7 is on the right.

$$\begin{array}{c} 56 \\ \div \quad \div \\ \square \quad x \quad 7 \end{array}$$



# Mental Multiplication

Try using these mental calculation strategies to see how many of these calculations you can perform mentally.

**x4**

Double the number and then double it again.

**e.g.**  $13 \times 4 = 52$   
( $13 \times 2 = 26$ ,  
 $26 \times 2 = 52$ )

**x5**

Multiply the number by 10 and then half it.

**e.g.**  $14 \times 5 = 70$   
( $14 \times 10 = 140$ , divided by  
 $2 = 70$ )

**x8**

Double the number, double it again and then double it a third time.

**e.g.**  $13 \times 8 = 104$   
( $13 \times 2 = 26$ ,  $26 \times 2 = 52$ ,  
 $52 \times 2 = 104$ )

**x9**

Multiply the number by 10 and then subtract the number.

**e.g.**  $15 \times 9 = 135$  ( $15 \times 10 = 150$ ,  $150 - 15 = 135$ )

**x11**

Multiply the number by 10 and then add the number.

**e.g.**  $7 \times 11 = 77$  ( $7 \times 10 = 70$ ,  $70 + 7 = 77$ )

**x15**

Multiply the number by 10 and then add half of the total.

**e.g.**  $12 \times 15 = 180$   
( $12 \times 10 = 120$ ,  $120$  divided by  $2 = 60$ ,  $60 + 120 = 180$ )

- $14 \times 4 =$
- $13 \times 5 =$
- $6 \times 8 =$
- $8 \times 9 =$
- $9 \times 11 =$
- $6 \times 15 =$
- $15 \times 4 =$
- $9 \times 5 =$
- $12 \times 8 =$
- $13 \times 9 =$
- $10 \times 11 =$
- $3 \times 15 =$
- $15 \times 4 =$
- $20 \times 5 =$
- $5 \times 8 =$
- $12 \times 9 =$
- $13 \times 11 =$
- $8 \times 15 =$
- $4 \times 8 =$
- $9 \times 15 =$
- $11 \times 15 =$
- $14 \times 8 =$





# Multiplying 2-digit Numbers by 1-digit Numbers Using Grid Method

Multiplying 2-Digit Numbers by 1-Digit Numbers Using the Grid Method

1.

×	10	3
9		

2.

×	70	1
5		

3.

×	50	6
5		

4.

×	20	3
3		

5.

×	80	9
9		

6.

×	60	3
7		

7.

×	70	5
9		

8.

×	10	3
5		

9.

×	20	8
9		

10.

×	50	3
8		



## New Bus Stop Method Formal Division of 2-digit Numbers

LO: I can use a formal method of division

1.  $69 \div 3 =$

2.  $88 \div 4 =$

3.  $90 \div 5 =$

4.  $76 \div 4 =$

5.  $72 \div 3 =$

6.  $70 \div 5 =$

7.  $24 \div 2 =$

8.  $56 \div 4 =$

9.  $36 \div 3 =$

10.  $65 \div 5 =$

11.  $96 \div 4 =$

12.  $90 \div 6 =$

13.  $96 \div 8 =$

14.  $96 \div 6 =$

15.  $88 \div 8 =$

16.  $80 \div 4 =$

17.  $95 \div 5 =$

18.  $92 \div 4 =$

19.  $46 \div 2 =$

20.  $78 \div 6 =$

21.  $92 \div 4 =$

22.  $84 \div 4 =$

23.  $72 \div 3 =$

24.  $70 \div 7 =$

25.  $88 \div 4 =$

26.  $80 \div 5 =$

27.  $98 \div 7 =$

28.  $66 \div 3 =$

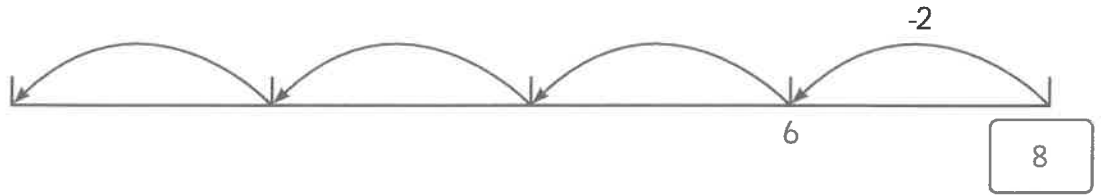
29.  $84 \div 4 =$

30.  $91 \div 7 =$

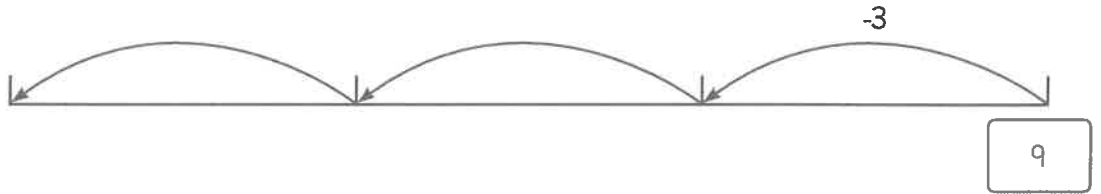


# Division Using a Numberline

1.  $8 \div 2 =$



2.  $9 \div 3 =$



3.  $12 \div 4 =$



4.  $12 \div 3 =$



5.  $18 \div 3 =$



6.  $18 \div 6 =$



7.  $36 \div 3 =$

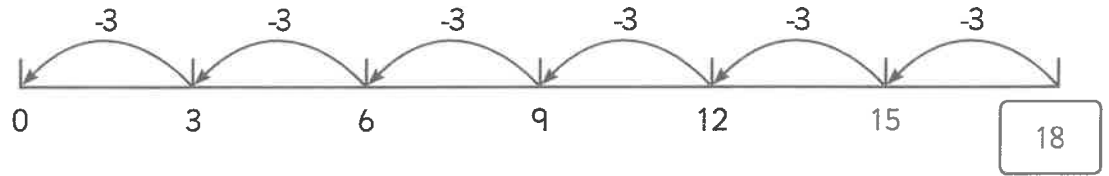


8.  $48 \div 4 =$





9.  $18 \div 3 = 6$



10.  $18 \div 6 =$

\_\_\_\_\_

11.  $28 \div 7 =$

\_\_\_\_\_

12.  $32 \div 8 =$

\_\_\_\_\_

13.  $42 \div 3 =$

\_\_\_\_\_

14.  $32 \div 4 =$

\_\_\_\_\_

15.  $52 \div 4 =$

\_\_\_\_\_

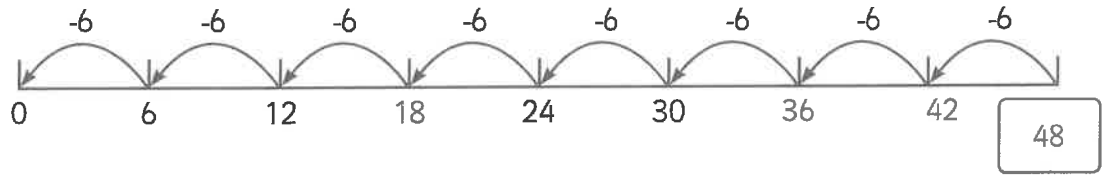
16.  $70 \div 5 =$

\_\_\_\_\_





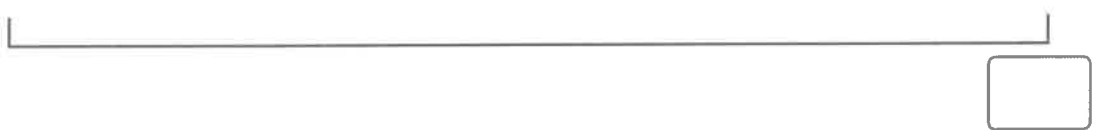
17.  $48 \div 6 = 8$



18.  $54 \div 6 =$



19.  $96 \div 8 =$



20.  $88 \div 8 =$



21.  $88 \div 4 =$



22.  $64 \div 8 =$



23.  $91 \div 7 =$



24.  $108 \div 9 =$

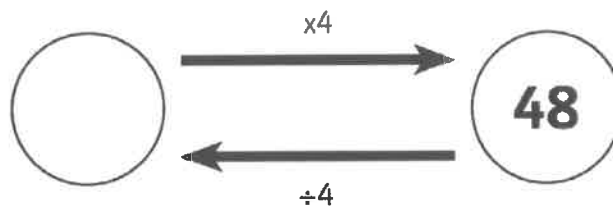




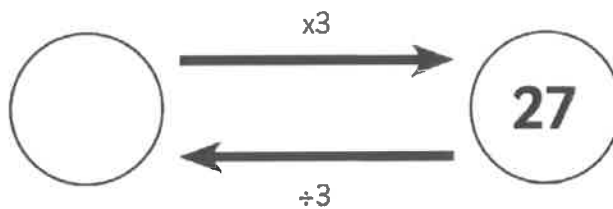
# I'm Thinking of a Number

Use the inverse operation to work backwards and find the original number.

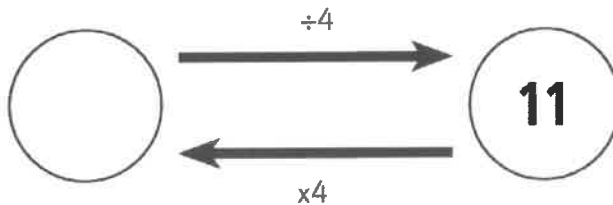
e.g. Samiya is thinking of a number. She multiplies it by 4 and her new number is 48. What number was she first thinking of?



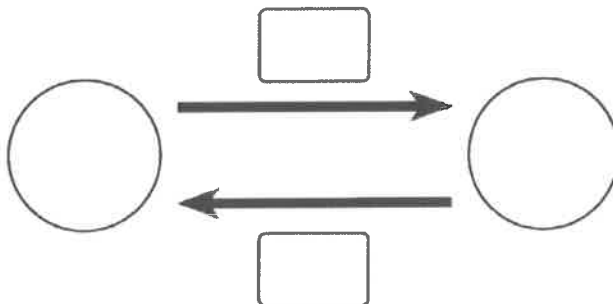
1. Nat is thinking of a number. He multiplies it by 3 and his new number is 27. What number was he first thinking of?



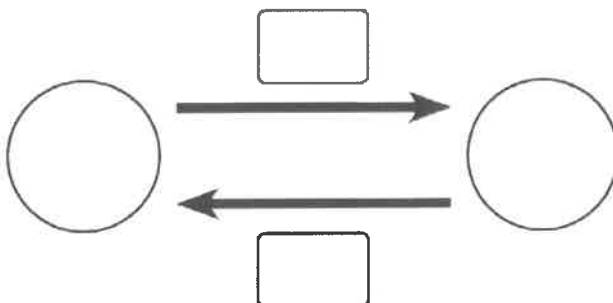
2. Shahid is thinking of a number. He divides it by 4 and his new number is 11. What number was he first thinking of?



3. Esme is thinking of a number. She divides it by 8 and her new number is 5. What number was she first thinking of?



4. Taylor is thinking of a number. He multiplies it by 3 and his new number is 24. What number was he first thinking of?





5. Levi is thinking of a number. He multiplies it by 8 and his answer is 32. What number was he first thinking of?

6. Vivi is thinking of a number. She divides it by 3 and her new number is 12. What number was she first thinking of?



# Deriving Related Multiplication Facts From Known Multiplication Tables

Complete the times tables question on the small lorries then use the answers to complete the associated facts on the big lorries!

1.  $3 \times 4 =$         $3 \times 40 =$         $4 \times 30 =$         $4 \times 3 =$

2.  $3 \times 6 =$         $3 \times 60 =$         $6 \times 30 =$         $6 \times 3 =$

3.  $3 \times 7 =$         $3 \times 70 =$         $7 \times 30 =$         $7 \times 3 =$

4.  $4 \times 4 =$         $4 \times 40 =$         $40 \times 4 =$         $4 \times 4 =$

5.  $4 \times 7 =$         $40 \times 7 =$         $7 \times 40 =$         $7 \times 4 =$

6.

7.

8.

9.

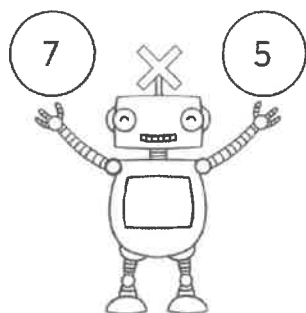
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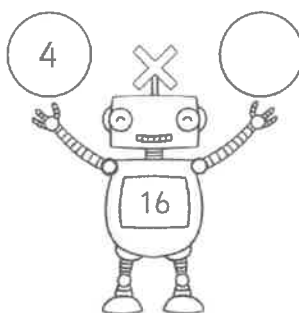


# Multiplication Missing Numbers

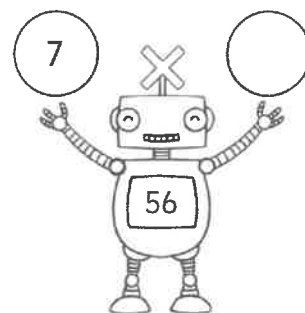
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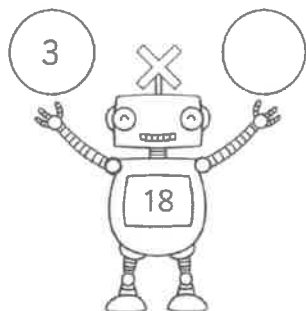
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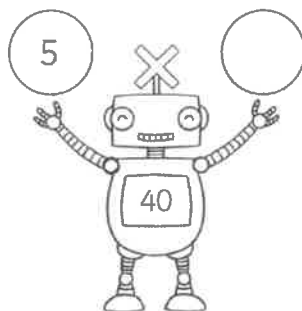
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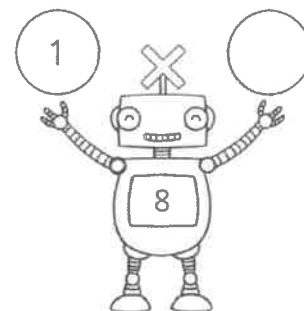
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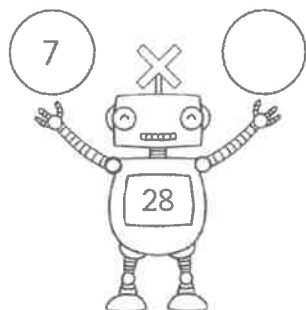
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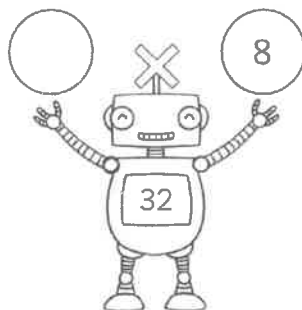
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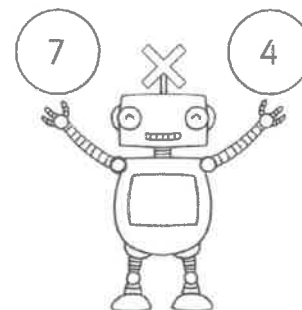
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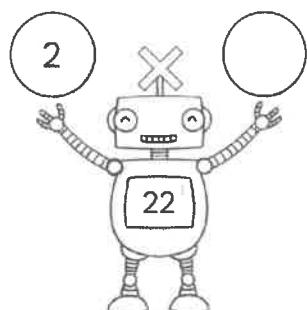
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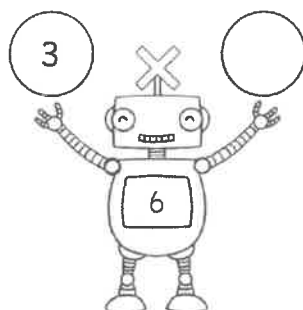
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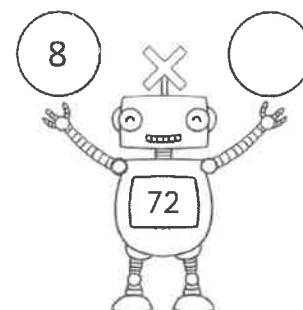
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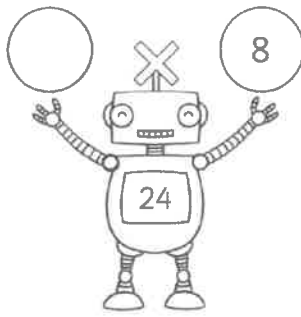


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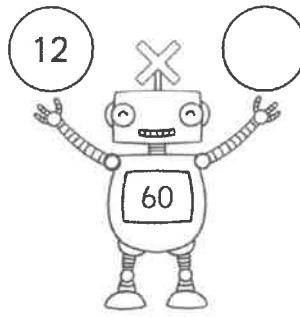




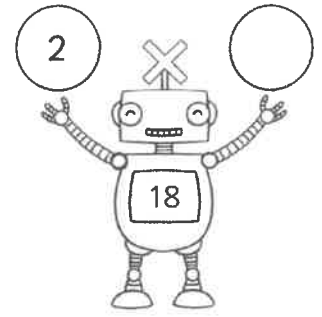
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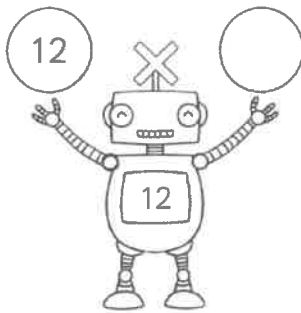
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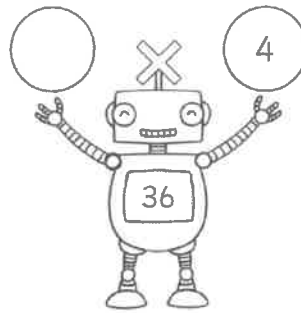
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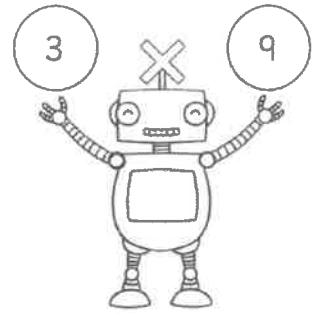
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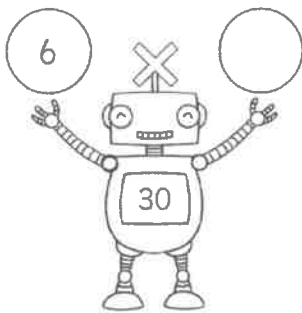
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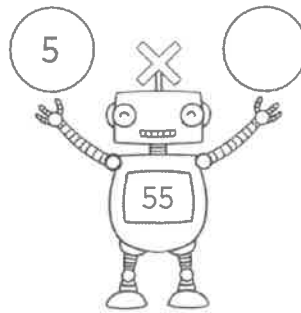
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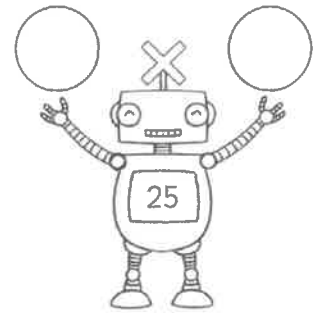
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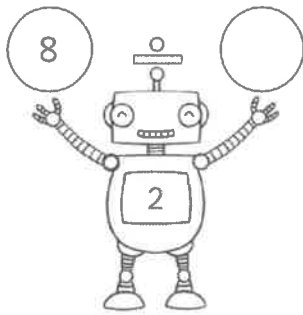
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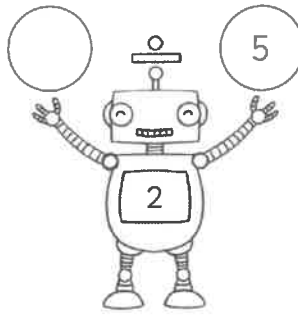


# Division Missing Numbers

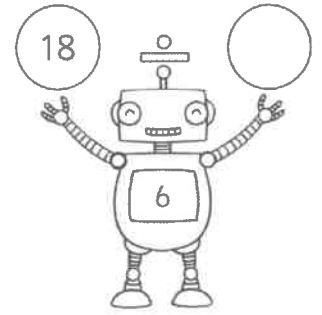
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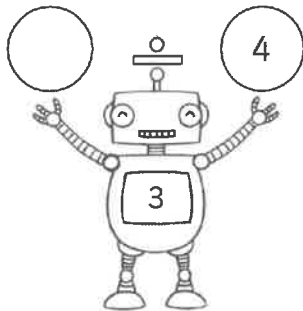
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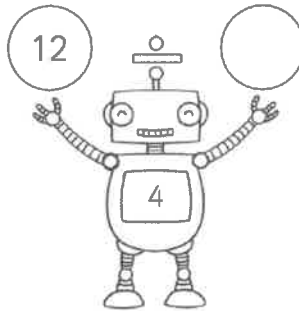
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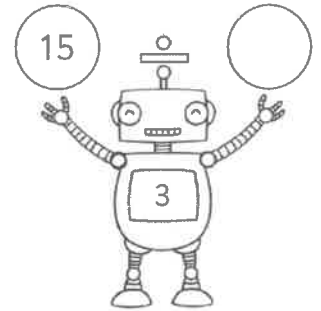
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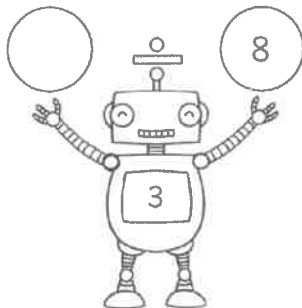
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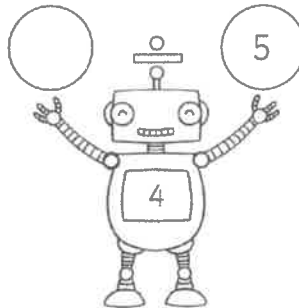
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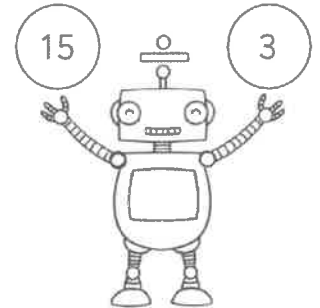
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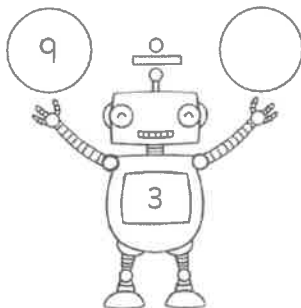
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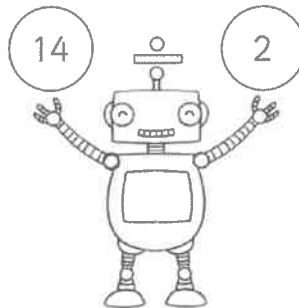
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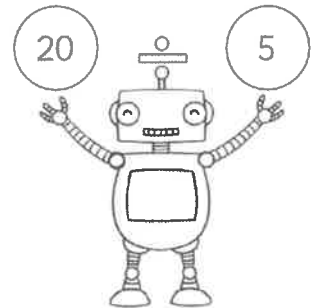
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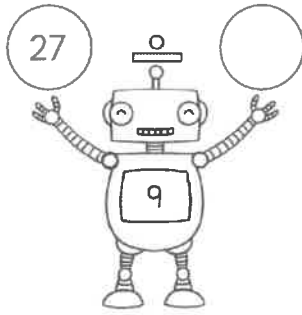


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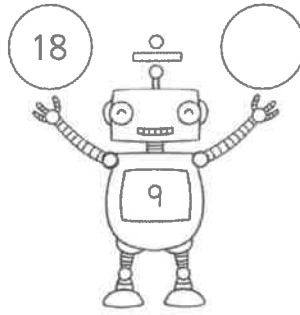




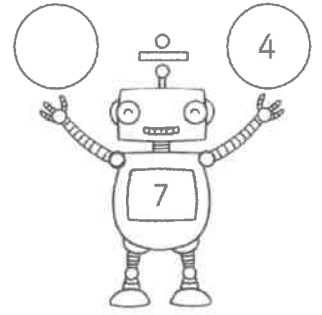
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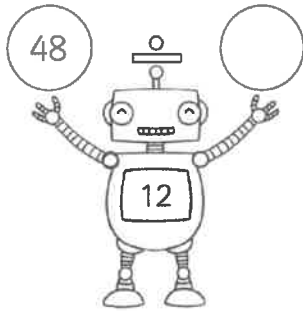
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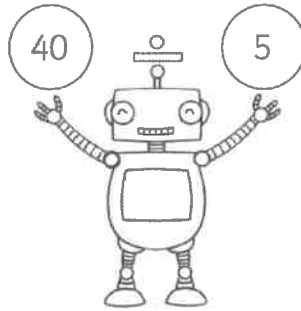
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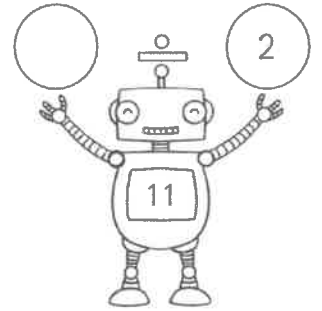
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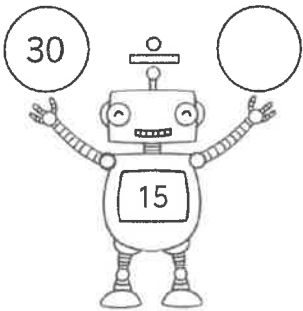
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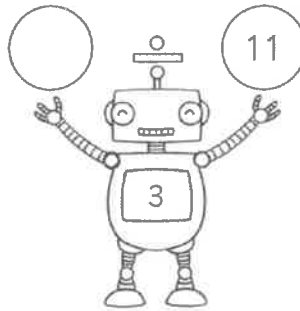
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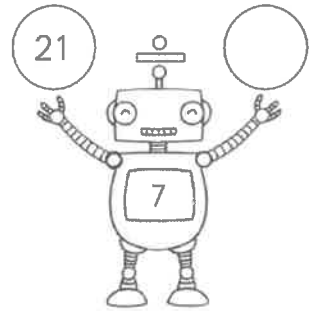
19.



20.



21.















# Colour the Division Equation

Can you colour all the lines of three number squares that make a division equation? The line can be in any order but squares must be beside each other in a column or in a row. Squares can be part of more than one equation.

The example  $15 \div 3 = 5$  is shown below.

Round 1

15	6	8	60	5	12	1	12
5	1	5	7	16	4	23	12
3	21	4	9	7	3	1	1
8	3	20	10	2	17	16	1
4	1	1	5	3	16	2	8
32	18	9	2	2	4	7	2
25	3	15	3	4	4	4	16
18	6	1	6	9	13	9	14

Round 2

88	10	31	1	41	21	6	27
8	25	23	4	4	7	9	9
11	1	11	9	21	3	9	3
3	15	5	2	10	12	14	24
33	3	55	3	4	4	16	8
4	44	11	2	40	8	5	15
7	8	13	2	5	2	10	20
28	4	7	8	8	4	2	2

Round 3

24	12	2	1	3	7	14	35
21	17	4	9	8	10	2	5
19	20	8	4	32	2	7	7
6	10	2	20	11	5	5	25
5	5	4	5	15	3	1	3
4	2	3	6	2	36	5	2
4	18	9	10	13	12	2	6
16	16	3	27	9	14	12	15

Round 4

14	18	20	2	10	2	15	6
7	17	4	9	8	4	32	23
2	10	5	22	80	14	8	16
11	9	3	9	28	7	4	10
7	90	15	13	8	35	19	24
25	4	2	15	3	5	6	30
21	12	4	5	12	20	20	10
48	6	8	12	4	4	16	3

