

SIGMABUDGIE · GRADE 4

Division

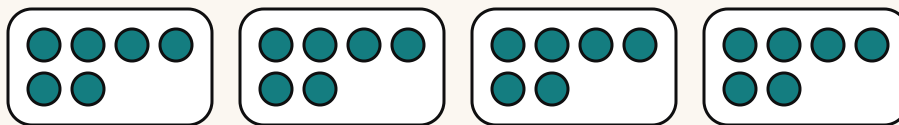
A gentle walkthrough & a 24-question exam

Part 1 walks through division and remainders from the very beginning, with drawings. Part 2 is a 24-question exam that starts easy and slowly builds to harder, ISEE-style reasoning questions. Work through the lesson together first, then let your child try the exam. The answer key at the back explains every question.

1 · Two questions, one operation

Sharing: 24 pencils shared by 4 kids. How many each? $24 \div 4 = 6$.

Grouping: 24 pencils, 4 in each box. How many boxes? $24 \div 4 = 6$. Same division, different question.

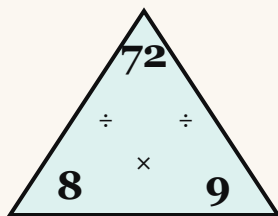


$$24 \div 4 = 6$$

2 · Division undoes multiplication

72 ÷ 8: ask "8 times what is 72?" $8 \times 9 = 72$, so $72 \div 8 = 9$. Every division fact hides inside a multiplication fact.

The fact family for 8, 9, 72: 8×9 , 9×8 , $72 \div 8$, $72 \div 9$.

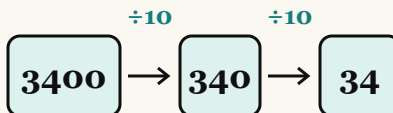


$$72 \div 8 = 9 \text{ because } 8 \times 9 = 72$$

3 · Dividing by 10 and 100

$\div 10$ takes a zero off the end: $340 \div 10 = 34$. $\div 100$ takes two: $3,400 \div 100 = 34$.

Multiples of ten: $120 \div 40$ is "12 tens $\div$ 4 tens" = 3.

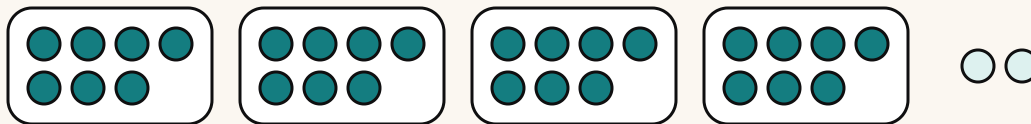


$\div 10$, then $\div 10$ again

4 • Remainders

$30 \div 7$: $7 \times 4 = 28$ fits, $7 \times 5 = 35$ is too big. So 4 groups, and $30 - 28 = 2$ left over. We write **4 R2**.

The remainder is always **smaller than the divisor**. If it is not, you can make another group.



$$30 \div 7 = 4 \text{ R}2$$

5 • Long division: two digits

$84 \div 6$. Divide the tens: $8 \div 6$ goes 1 time (write 1 on top), $1 \times 6 = 6$, $8 - 6 = 2$. Bring down the 4: 24.

Divide: $24 \div 6 = 4$ (write 4 on top), $4 \times 6 = 24$, $24 - 24 = 0$. Answer **14**, no remainder.

$$\begin{array}{r} 14 \\ 6 \overline{) 84} \\ \underline{6} \\ 24 \\ \underline{24} \\ 0 \end{array}$$

divide, multiply, subtract, bring down

6 • Long division: three digits

$136 \div 8$. $1 \div 8$ does not go, so use 13: $13 \div 8 = 1$, $1 \times 8 = 8$, $13 - 8 = 5$. Bring down the 6: 56.

$56 \div 8 = 7$, $7 \times 8 = 56$, $56 - 56 = 0$. Answer **17**.

$$\begin{array}{r} 17 \\ 8 \overline{) 136} \\ \underline{8} \\ 56 \\ \underline{56} \\ 0 \end{array}$$

$$136 \div 8 = 17$$

7 • Long division with a remainder

$94 \div 9$. $9 \div 9 = 1$, $1 \times 9 = 9$, $9 - 9 = 0$. Bring down 4: $4 \div 9$ does not go, write 0 on top. Remainder **4**.

Answer: **10 R4**. Check: $10 \times 9 + 4 = 94$.

$$\begin{array}{r} 10 \\ 9 \overline{) 94} \\ \underline{9} \\ 04 \\ \underline{0} \\ 4 \end{array}$$

$$94 \div 9 = 10 \text{ R}4$$

8 • Check by multiplying back

Quotient $\times$ divisor + remainder should give the number you started with. $136 \div 8 = 17$: check $17 \times 8 = 136$ ✓.

$30 \div 7 = 4 \text{ R}2$: check $4 \times 7 + 2 = 30$ ✓. Always check on a test; it takes ten seconds.

9 • "How many are left over?"

"72 eggs are packed into boxes of 7. How many eggs are left over?" The question wants the **remainder**: $72 \div 7 = 10 \text{ R}2$. Answer: 2 eggs.

Read the question twice. Sometimes they want the quotient, sometimes the remainder.

10 • "How many buses?" Round up

"118 children go on a trip. Each bus holds 9. What is the least number of buses?" $118 \div 9 = 13 \text{ R}1$. 13 buses leave 1 child behind, so you need **14**.

When a remainder means "someone is left out," add one more group.

11 • Sharing money and measures

"\$150 for tickets at \$25 each. How many tickets?" $150 \div 25 = 6$. Count by 25s: 25, 50, 75, 100, 125, 150.

"A 6 m wall, tiles 40 cm wide." Change to the same unit: $600 \text{ cm} \div 40 = 15$ tiles.

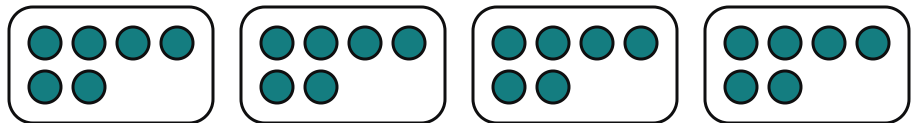
12 • Two steps with division

"200 stickers shared by 8 children, then each child gives away 5." $200 \div 8 = 25$ each, then $25 - 5 = 20$.

Write the first answer down before the second step. You are ready for the test! 🎉

Read each drawing first, then choose the best answer. Take your time, there is no clock here. Questions start gentle and get harder toward the end. Circle your answer.

1 24 pencils are shared equally by 4 kids. How many does each kid get?



A 4

B 20

C 6

D 28

2 $72 \div 8 = ?$

A 9

B 8

C 7

D 64

3 $340 \div 10 = ?$

A 3.4

B 330

C 3,400

D 34

4 $56 \div 7 = ?$

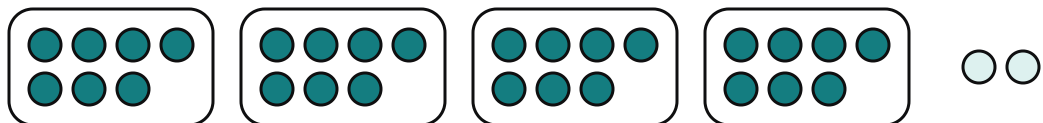
A 7

B 8

C 9

D 49

5 $30 \div 7 = ?$



A 4

B 5

C 3 R9

D 4 R2

6 Which fact is in the same family as $8 \times 9 = 72$?

A $72 - 9 = 63$

B $8 + 9 = 17$

C $72 \div 9 = 8$

D $72 \div 8 = 8$

7 $84 \div 6 = ?$

$$\begin{array}{r} 14 \\ 6 \overline{) 84} \\ \underline{6} \\ 24 \\ \underline{24} \\ 0 \end{array}$$

A 14

B 12

C 16

D 13

8 $120 \div 40 = ?$

A 30

B 3

C 4

D 80

9 136 pencils are shared equally among 8 children. How many pencils does each get?

A 16

B 18

C 128

D 17

10 72 eggs are packed into boxes of 7. How many eggs are left over?

A 10

B 3

C 2

D 1

11 Which shows a correct check for $94 \div 9 = 10 \text{ R}4$?

A $10 \times 4 + 9 = 94$

B $10 \times 9 + 4 = 94$

C $94 \times 9 = 10$

D $10 + 9 + 4 = 94$

12 200 stickers are shared equally among 8 children. How many stickers does each get?

A 25

B 20

C 24

D 192

13 Each ticket costs \$25. A group spends \$150 in total. How many tickets did they buy?

A 5

B 7

C 6

D 125

14 $3,400 \div 100 = ?$

A 340

B 3.4

C 3,300

D 34

15 118 children go on a trip. Each bus holds 9. What is the least number of buses needed so everyone has a seat?

A 13

B 14

C 13 R1

D 12

16 Which number sentence checks that $136 \div 8 = 17$?

$$\begin{array}{r} 17 \\ 8 \overline{) 136} \\ \underline{8} \\ 56 \\ \underline{56} \\ 0 \end{array}$$

A $17 \times 8 = 136$

B $17 + 8 = 136$

C $136 \times 8 = 17$

D $17 \times 6 = 136$

17 86 apples are packed into boxes of 7. How many apples are left over?

A 2

B 12

C 1

D 6

18 $155 \div 5 = ?$

A 30

B 35

C 31

D 25

19 A wall is 6 m long. Tiles are 40 cm wide. How many tiles fit along the wall? (1 m = 100 cm)

A 150

B 24

C 12

D 15

20 162 children go on a trip. Each bus holds 12. What is the least number of buses needed?

A 13

B 14

C 13 R6

D 15

21 A number divided by 6 is 14 with a remainder of 3. What is the number?

A 84

B 87

C 23

D 81

22 200 stickers are shared equally among 8 children. Then each child gives 5 stickers away. How many does each child have now?

A 25

B 30

C 15

D 20

23 Which division has the largest remainder?

A $50 \div 9$

B $50 \div 7$

C $50 \div 5$

D $50 \div 8$

24 Mrs. Lee has 94 stickers. She gives each of her 9 students the same number and keeps the rest. What is the most each student can get, and how many does she keep?

A 9 each, she keeps 13

B 10 each, she keeps 0

C 10 each, she keeps 4

D 11 each, she keeps 5

ANSWER KEY & EXPLANATIONS

- 1 C** $24 \div 4 = 6$.
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- 2 A** $8 \times 9 = 72$.
-
- 3 D** Dividing by 10 takes off a zero.
-
- 4 B** $7 \times 8 = 56$.
-
- 5 D** $7 \times 4 = 28$, and $30 - 28 = 2$ left over.
-
- 6 C** The family for 8, 9, 72 includes $72 \div 9 = 8$.
-
- 7 A** $8 \div 6 = 1$ R2, bring down 4: $24 \div 6 = 4$. So 14.
-
- 8 B** $12 \text{ tens} \div 4 \text{ tens} = 3$.
-
- 9 D** $136 \div 8 = 17$. Check: $17 \times 8 = 136$.
-
- 10 C** $72 \div 7 = 10$ R2. The question asks for the remainder: 2.
-
- 11 B** Quotient $\times$ divisor + remainder = dividend.
-
- 12 A** $200 \div 8 = 25$. Check: $25 \times 8 = 200$.
-
- 13 C** $150 \div 25 = 6$. Count by 25s: 25, 50, 75, 100, 125, 150.
-
- 14 D** Dividing by 100 takes off two zeros.
-
- 15 B** $118 \div 9 = 13$ R1. One child is left, so a 14th bus is needed.
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- 16 A** Multiply the quotient by the divisor: $17 \times 8 = 136$.
-
- 17 A** $7 \times 12 = 84$, and $86 - 84 = 2$.
-
- 18 C** $150 \div 5 = 30$, and $5 \div 5 = 1$. So 31.
-
- 19 D** $6 \text{ m} = 600 \text{ cm}$. $600 \div 40 = 15$.
-
- 20 B** $162 \div 12 = 13$ R6. 6 children still need a seat, so 14 buses.
-
- 21 B** $14 \times 6 = 84$, plus the remainder 3: 87.
-
- 22 D** $200 \div 8 = 25$. Then $25 - 5 = 20$.
-
- 23 A** $50 \div 9 = 5$ R5. $50 \div 7 = 7$ R1. $50 \div 5 = 10$ R0. $50 \div 8 = 6$ R2.
-
- 24 C** $94 \div 9 = 10$ R4. Each student gets 10 and she keeps 4.
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