

WA4MNADI1

Calculating with number

Core + Challenge

Long Division — With Remainder

I can divide a 2- or 3-digit number by a 1-digit number using the formal written (long division) method, expressing and interpreting the remainder.

Name: _____ Date: _____ Score: / 53

Key idea

Long division with a remainder: divide as before, but when the final subtraction leaves an amount smaller than the divisor, that amount is the **remainder** — write it as 'r' after the quotient. The remainder is always smaller than the divisor.

E.g. $87 \div 4$: 4 goes into 87 twenty-one times ($21 \times 4 = 84$), leaving $87 - 84 = 3 \rightarrow 21 \text{ r } 3$.

A Fluency *practise the skill*

/16 marks

Use the long division method in your working space for each problem. Write each answer as a quotient and remainder, e.g. '21 r 3'.

1. $87 \div 4 = ?$ _____

2. $95 \div 6 = ?$ _____

3. $79 \div 5 = ?$ _____

4. $94 \div 7 = ?$ _____

5. $74 \div 3 = ?$ _____

6. $99 \div 7 = ?$ _____

7. $89 \div 6 = ?$ _____

8. $97 \div 5 = ?$ _____

9. $79 \div 4 = ?$ _____

10. $85 \div 3 = ?$ _____

11. $71 \div 3 = ?$ _____

12. $95 \div 4 = ?$ _____

13. $80 \div 6 = ?$ _____

14. $97 \div 3 = ?$ _____

15. $115 \div 8 = ?$ _____

16. $148 \div 9 = ?$ _____

B Core *apply the skill to problems*

/21 marks

1

A school has 86 students going on an excursion. Each bus holds 9 students. How many buses are needed to fit everyone, including the students left over?

[3 marks]

Answer: _____

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2

347 eggs are packed into cartons of 6. How many full cartons can be made, and how many eggs are left over? If each full carton is sold for \$4, how much money is made from selling the full cartons?

[4 marks]

Answer: _____

3

A charity has 95 blankets to pack into bags of 8. How many bags can be completely filled, and how many blankets are left over?

[3 marks]

Answer: _____

4

A factory has 503 bolts to pack into bags of 7. How many full bags can be made? If each full bag is then shipped in crates of 10 bags, how many full crates can be shipped?

[4 marks]

Answer: _____

5

127 students need to be grouped into teams of 9 for an activity. How many full teams of 9 can be made, and how many students are left without a full team?

[3 marks]

Answer: _____

6

215 photos need to fit into a photo album with 8 photos per page. How many pages are completely filled? If each completed page takes 3 minutes to arrange, how long does it take to arrange all the completed pages?

[4 marks]

Answer: _____

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C**Reasoning** *explain, justify and check***/9 marks****1**

Explain what the remainder represents when you divide 87 by 4.

[2 marks]**2**

A problem asks how many buses are needed to carry 86 students if each bus holds 9. Explain why the answer is 10 buses, not 9, even though $86 \div 9 = 9$ remainder 5.

[2 marks]**3**Explain how you can check that $95 \div 8 = 11$ remainder 7 is correct.**[2 marks]****4**

A student says that a division with a remainder always has a remainder of 1. Is this true? Explain and give an example that supports your answer.

[3 marks]**D****Challenge** *multi-step and problem-solving***/7 marks****1**

Find a division of a 2-digit number by 6 that has the largest possible remainder. What is the dividend, quotient and remainder?

[2 marks]

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Answer: _____

2

A number divided by 7 gives a quotient of 12 and a remainder of 4. What is the number?

[2 marks]

Answer: _____

3

A charity packs 250 care packages into boxes. Each box can hold either 8 or 9 care packages. For each box size, how many full boxes can be packed and how many care packages are left over? Which box size leaves fewer care packages over?

[3 marks]

Answer: _____

How did I go?

Fluency ____/16 Core ____/21 Reasoning ____/9 Challenge ____/7 **Total ____/53**

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