

WA4MNADI1

Calculating with number

Core + Challenge

Long Division — No Remainder

I can divide a 2- or 3-digit number by a 1-digit number using the formal written (long division) method, with no remainder.

Name: _____ Date: _____ Score: / 53

Key idea

Long division: work from the left-most digit. Divide, write the result above, multiply back, subtract, then bring down the next digit and repeat.

E.g. $84 \div 4$: $8 \div 4 = 2$ (tens), write 2; $4 \div 4 = 1$ (ones), write 1 $\rightarrow$ **21**. Check: $21 \times 4 = 84$.

A Fluency *practise the skill*

/16 marks

Use the long division method in your working space for each problem. Every answer divides exactly, with no remainder.

1. $84 \div 4 = ?$ _____

2. $96 \div 6 = ?$ _____

3. $75 \div 5 = ?$ _____

4. $91 \div 7 = ?$ _____

5. $72 \div 3 = ?$ _____

6. $98 \div 7 = ?$ _____

7. $84 \div 6 = ?$ _____

8. $95 \div 5 = ?$ _____

9. $76 \div 4 = ?$ _____

10. $81 \div 3 = ?$ _____

11. $69 \div 3 = ?$ _____

12. $92 \div 4 = ?$ _____

13. $78 \div 6 = ?$ _____

14. $93 \div 3 = ?$ _____

15. $112 \div 8 = ?$ _____

16. $144 \div 9 = ?$ _____

B Core *apply the skill to problems*

/21 marks

- 1 735 students are seated into rows of 5 for an assembly. How many rows are needed?

[3 marks]

Answer: _____

- 2 A publisher prints 864 books and packs them into boxes of 8. If 3 boxes are then found damaged and discarded, how many boxes of books remain?

[4 marks]

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Answer: _____

3

A charity has 936 donated cans and packs them into boxes of 6. How many boxes does it need?

[3 marks]

Answer: _____

4

A factory makes 972 parts and packs them into crates of 4. If 25 crates are sent to one warehouse, how many crates are left for other warehouses?

[4 marks]

Answer: _____

5

A farmer harvests 648 apples and packs them into bags of 8. How many bags does he fill?

[3 marks]

Answer: _____

6

A library has 756 books to shelve in equal groups of 7. After shelving, 15 of the groups are moved to a different room. How many groups remain in the original room?

[4 marks]

Answer: _____

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

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1

Explain the steps of the long division algorithm for $84 \div 4$, working through each digit from left to right.

[2 marks]

2

Explain how you can check that $936 \div 6 = 156$ is correct, without dividing again.

[2 marks]

3

Jamal says that a 3-digit number divided by a 1-digit number can never be an exact (whole number) division. Is he correct? Explain and give an example.

[2 marks]

4

A student says that long division always starts by dividing the ones digit first. Is this true? Explain why or why not, referring to how the standard written algorithm works.

[3 marks]

D

Challenge *multi-step and problem-solving*

/7 marks

1

Find a 3-digit number that divides exactly by 9, with a quotient between 90 and 100. Show the division.

[2 marks]

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Answer: _____**2**

A number divided by 8 gives exactly 124. What is the number?

[2 marks]**Answer:** _____**3**

A charity is packing 1,260 bottles of water into boxes. Boxes can hold either 6 or 9 bottles each, with no bottles left over. How many boxes would be needed for each box size, and which box size uses fewer boxes?

[3 marks]**Answer:** _____

How did I go?

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

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