

Dividing with Remainders

Name: _____ Date: _____ Score: _____ / 24

Q Quick Review

Division splits a number into equal groups. Using long division, you repeat the same cycle: **divide, multiply, subtract, and bring down** the next digit. Work from the left, one digit at a time. Sometimes the number does not split evenly, and the amount left over is the **remainder**. The remainder must always be *smaller* than the divisor. You can check your work: $(\text{quotient} \times \text{divisor}) + \text{remainder}$ should equal the number you started with.

◇ **Example:** Find $95 \div 6$.
 ⇒ Ask how many 6s fit into 9: that is 1, since $1 \times 6 = 6$. Subtract: $9 - 6 = 3$. Bring down the 5 to make 35. How many 6s fit into 35? That is 5, since $5 \times 6 = 30$. Subtract: $35 - 30 = 5$. There are no more digits to bring down, so 5 is the remainder. The answer is 15 R 5. Check: $15 \times 6 + 5 = 90 + 5 = 95$ — it works!

Answer: 15 R 5

PRACTICE

Divide. Write each answer with its remainder.

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|------------------|-------|--------------------|-------|
| 1. $47 \div 3$ | _____ | 11. $832 \div 9$ | _____ |
| 2. $58 \div 4$ | _____ | 12. $945 \div 8$ | _____ |
| 3. $95 \div 6$ | _____ | 13. $1,234 \div 5$ | _____ |
| 4. $127 \div 5$ | _____ | 14. $2,057 \div 6$ | _____ |
| 5. $238 \div 7$ | _____ | 15. $3,471 \div 8$ | _____ |
| 6. $345 \div 8$ | _____ | 16. $4,206 \div 7$ | _____ |
| 7. $461 \div 9$ | _____ | 17. $5,360 \div 9$ | _____ |
| 8. $523 \div 4$ | _____ | 18. $6,048 \div 4$ | _____ |
| 9. $640 \div 6$ | _____ | 19. $7,125 \div 8$ | _____ |
| 10. $758 \div 7$ | _____ | 20. $8,302 \div 6$ | _____ |

◆ Word Problems

21. A teacher has 58 pencils to share equally among 4 groups. How many pencils does each group get, and how many are left over? _____
22. There are 127 students going on a field trip. Each van holds 9 students. How many vans are full, and how many students are in the last van? _____
23. A baker puts 235 muffins into boxes of 6. How many full boxes are there, and how many muffins are left over? _____
24. A school has 1,450 books to put on shelves that each hold 8 books. How many shelves are completely full, and how many books are left over? _____



Answer Keys

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| <p>1. 15 R 2</p> <p>2. 14 R 2</p> <p>3. 15 R 5</p> <p>4. 25 R 2</p> <p>5. 34</p> <p>6. 43 R 1</p> <p>7. 51 R 2</p> <p>8. 130 R 3</p> <p>9. 106 R 4</p> <p>10. 108 R 2</p> <p>11. 92 R 4</p> <p>12. 118 R 1</p> | <p>13. 246 R 4</p> <p>14. 342 R 5</p> <p>15. 433 R 7</p> <p>16. 600 R 6</p> <p>17. 595 R 5</p> <p>18. 1,512</p> <p>19. 890 R 5</p> <p>20. 1,383 R 4</p> <p>21. 14 pencils, 2 left over</p> <p>22. 14 full vans, 1 in the last van</p> <p>23. 39 full boxes, 1 left over</p> <p>24. 181 full shelves, 2 left over</p> |
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Step-by-Step Explanations

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| <p>1. 3 goes into 47 fifteen times ($15 \times 3 = 45$) with 2 left over.</p> <p>2. $14 \times 4 = 56$, and $58 - 56 = 2$, so 14 R 2.</p> <p>3. $15 \times 6 = 90$, and $95 - 90 = 5$, so 15 R 5.</p> <p>4. $25 \times 5 = 125$, and $127 - 125 = 2$, so 25 R 2.</p> <p>5. $34 \times 7 = 238$ exactly, so there is no remainder.</p> <p>6. $43 \times 8 = 344$, and $345 - 344 = 1$, so 43 R 1.</p> <p>7. $51 \times 9 = 459$, and $461 - 459 = 2$, so 51 R 2.</p> <p>8. $130 \times 4 = 520$, and $523 - 520 = 3$, so 130 R 3.</p> <p>9. $106 \times 6 = 636$, and $640 - 636 = 4$, so 106 R 4.</p> <p>10. $108 \times 7 = 756$, and $758 - 756 = 2$, so 108 R 2.</p> <p>11. $92 \times 9 = 828$, and $832 - 828 = 4$, so 92 R 4.</p> <p>12. $118 \times 8 = 944$, and $945 - 944 = 1$, so 118 R 1.</p> <p>13. $246 \times 5 = 1,230$, and $1,234 - 1,230 = 4$, so 246 R 4.</p> | <p>14. $342 \times 6 = 2,052$, and $2,057 - 2,052 = 5$, so 342 R 5.</p> <p>15. $433 \times 8 = 3,464$, and $3,471 - 3,464 = 7$, so 433 R 7.</p> <p>16. $600 \times 7 = 4,200$, and $4,206 - 4,200 = 6$, so 600 R 6.</p> <p>17. $595 \times 9 = 5,355$, and $5,360 - 5,355 = 5$, so 595 R 5.</p> <p>18. $1,512 \times 4 = 6,048$ exactly, so there is no remainder.</p> <p>19. $890 \times 8 = 7,120$, and $7,125 - 7,120 = 5$, so 890 R 5.</p> <p>20. $1,383 \times 6 = 8,298$, and $8,302 - 8,298 = 4$, so 1,383 R 4.</p> <p>21. Divide: $58 \div 4 = 14$ R 2. Each group gets 14 pencils with 2 left over.</p> <p>22. Divide: $127 \div 9 = 14$ R 1. So 14 vans are full and 1 student rides in another van.</p> <p>23. Divide: $235 \div 6 = 39$ R 1. There are 39 full boxes with 1 muffin left over.</p> <p>24. Divide: $1,450 \div 8 = 181$ R 2. So 181 shelves are full with 2 books left over.</p> |
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