

# Multi-Digit Division

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 24

## Q Quick Review

**Long division** breaks a big division problem into small, friendly steps. You repeat the same cycle: **divide, multiply, subtract, bring down**. Work from the left, one digit at a time, and write each result in the quotient above. If the divisor does not fit into a digit, write a 0 and keep going. Sometimes there is a leftover amount at the end — that is the **remainder**. Always estimate first so you can check that your answer is reasonable.

◇ **Example:** Find  $672 \div 16$ .  
 ⇒ Set up long division with 672 inside and 16 outside. First, does 16 fit into 6? No, so look at 67. How many times does 16 go into 67? It goes 4 times since  $16 \times 4 = 64$ . Write 4 above the 7, then subtract:  $67 - 64 = 3$ . Bring down the 2 to make 32. Now 16 goes into 32 exactly 2 times since  $16 \times 2 = 32$ . Write 2, subtract, and there is nothing left. The quotient is 42 with no remainder.

**Answer:** 42

## PRACTICE

Divide. Show the quotient and any remainder.

- |                    |       |                     |       |
|--------------------|-------|---------------------|-------|
| 1. $252 \div 12$   | _____ | 11. $3168 \div 22$  | _____ |
| 2. $396 \div 18$   | _____ | 12. $5187 \div 19$  | _____ |
| 3. $765 \div 15$   | _____ | 13. $500 \div 13$   | _____ |
| 4. $832 \div 32$   | _____ | 14. $742 \div 21$   | _____ |
| 5. $574 \div 14$   | _____ | 15. $4536 \div 24$  | _____ |
| 6. $945 \div 21$   | _____ | 16. $8190 \div 35$  | _____ |
| 7. $608 \div 19$   | _____ | 17. $6789 \div 31$  | _____ |
| 8. $999 \div 27$   | _____ | 18. $9728 \div 32$  | _____ |
| 9. $1288 \div 23$  | _____ | 19. $8526 \div 49$  | _____ |
| 10. $2964 \div 26$ | _____ | 20. $14040 \div 36$ | _____ |

### ◆ Word Problems

- A school orders 1850 pencils and packs them 25 to a box. How many full boxes can be filled? \_\_\_\_\_
- A theater seats 4128 people in rows of 24 seats each. How many rows are there? \_\_\_\_\_
- A delivery van carries 945 bottles arranged in crates of 15. How many crates does the van hold? \_\_\_\_\_
- A club shares 600 stickers equally among 18 members. How many does each get, and how many are left over? \_\_\_\_\_



## Answer Keys

- |  |   |
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| <ol style="list-style-type: none"> <li>1. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">21</span></li> <li>2. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">22</span></li> <li>3. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">51</span></li> <li>4. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">26</span></li> <li>5. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">41</span></li> <li>6. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">45</span></li> <li>7. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">32</span></li> <li>8. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">37</span></li> <li>9. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">56</span></li> <li>10. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">114</span></li> <li>11. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">144</span></li> <li>12. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">273</span></li> </ol> | <ol style="list-style-type: none"> <li>13. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">38 R 6</span></li> <li>14. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">35 R 7</span></li> <li>15. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">189</span></li> <li>16. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">234</span></li> <li>17. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">219</span></li> <li>18. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">304</span></li> <li>19. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">174</span></li> <li>20. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">390</span></li> <li>21. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">74 boxes</span></li> <li>22. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">172 rows</span></li> <li>23. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">63 crates</span></li> <li>24. <span style="border: 1px solid black; border-radius: 5px; padding: 2px 5px;">33 each, 6 left over</span></li> </ol> |
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### Step-by-Step Explanations

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| <ol style="list-style-type: none"> <li>1. <math>12 \times 21 = 252</math>, so the quotient is exactly 21.</li> <li>2. <math>18 \times 22 = 396</math>, so <math>396 \div 18 = 22</math>.</li> <li>3. <math>15 \times 51 = 765</math>, so the quotient is 51.</li> <li>4. <math>32 \times 26 = 832</math>, so <math>832 \div 32 = 26</math>.</li> <li>5. <math>14 \times 41 = 574</math>, so the quotient is 41.</li> <li>6. <math>21 \times 45 = 945</math>, so <math>945 \div 21 = 45</math>.</li> <li>7. <math>19 \times 32 = 608</math>, so the quotient is 32.</li> <li>8. <math>27 \times 37 = 999</math>, so <math>999 \div 27 = 37</math>.</li> <li>9. <math>23 \times 56 = 1288</math>, so the quotient is 56.</li> <li>10. <math>26 \times 114 = 2964</math>, so <math>2964 \div 26 = 114</math>.</li> <li>11. <math>22 \times 144 = 3168</math>, so the quotient is 144.</li> <li>12. <math>19 \times 273 = 5187</math>, so <math>5187 \div 19 = 273</math>.</li> <li>13. <math>13 \times 38 = 494</math>, and <math>500 - 494 = 6</math>, so it is 38 remainder 6.</li> </ol> | <ol style="list-style-type: none"> <li>14. <math>21 \times 35 = 735</math>, and <math>742 - 735 = 7</math>, so it is 35 remainder 7.</li> <li>15. <math>24 \times 189 = 4536</math>, so the quotient is 189.</li> <li>16. <math>35 \times 234 = 8190</math>, so <math>8190 \div 35 = 234</math>.</li> <li>17. <math>31 \times 219 = 6789</math>, so the quotient is 219.</li> <li>18. <math>32 \times 304 = 9728</math>. Notice the 0 in the quotient — 32 did not fit into that step.</li> <li>19. <math>49 \times 174 = 8526</math>, so <math>8526 \div 49 = 174</math>.</li> <li>20. <math>36 \times 390 = 14040</math>, so the quotient is 390.</li> <li>21. Divide the total by the box size: <math>1850 \div 25 = 74</math> full boxes, with none left over.</li> <li>22. <math>4128 \div 24 = 172</math>, so the theater has 172 equal rows.</li> <li>23. <math>945 \div 15 = 63</math>, so the bottles fill exactly 63 crates.</li> <li>24. <math>18 \times 33 = 594</math>, and <math>600 - 594 = 6</math>, so each member gets 33 stickers with 6 left over.</li> </ol> |
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