Division Practice Sheets: Grade 4

If division makes you a little nervous, you’re not alone! It just sounds harder than multiplication, doesn’t it? But once you see that multiplication and division are opposites of each other...that is, each can "undo" the other...division won’t seem quite so scary. You’ve probably been working on division concepts for quite a while now, but in fourth grade the pressure’s really on to get those basic skills down pat.

Use these division worksheets to reinforce what you’re learning in class, to prep for standardized tests, or to keep your math mind in gear during the summer. But before you jump in, take a look at the “Math Hints and Reminders” sheets. You may want to refer to these pages and their tips as you go through the worksheets.

Division Concepts and Facts
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Division Concepts and Facts: Math Hints and Reminders

Reviewing the Meaning of Division
Here’s a little division vocabulary to refresh your memory:

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Quotient</td>
<td>The answer to a division problem</td>
</tr>
<tr>
<td>Dividend</td>
<td>The number to be divided in a division problem</td>
</tr>
<tr>
<td>Divisor</td>
<td>The number by which a dividend is divided: the “goes into” number</td>
</tr>
<tr>
<td>Fact Family</td>
<td>A group of related facts using the same set of numbers:</td>
</tr>
<tr>
<td></td>
<td>5 x 9 = 45 45 ÷ 9 = 5</td>
</tr>
<tr>
<td></td>
<td>9 x 5 = 45 45 ÷ 5 = 9</td>
</tr>
</tbody>
</table>

There are two ways that you can write a division problem: 10 ÷ 2 = 5 and 2)10. And believe it or not, there are three ways to think about division:

<table>
<thead>
<tr>
<th>Division as Sharing</th>
<th>Division as Repeated Subtraction</th>
<th>Division as the Opposite of Multiplication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find 16 ÷ 4</td>
<td>Find 16 ÷ 8</td>
<td>Find 16 ÷ 2</td>
</tr>
<tr>
<td>Say you have 16 lollipops and you want to share them with 4 of your friends. How many lollipops should each friend get?</td>
<td>Subtract 8 from 16. Continue to subtract 8 until you reach zero.</td>
<td>Put your multiplication facts to work.</td>
</tr>
<tr>
<td></td>
<td>16 – 8 = 8</td>
<td>Think: What number times 2 equals 16?</td>
</tr>
<tr>
<td></td>
<td>8 – 8 = 0</td>
<td>2 x 8 = 16 so 16 ÷ 2 = 8</td>
</tr>
<tr>
<td></td>
<td>Now count how many times you subtracted: 2 times. So, 2 is the answer.</td>
<td></td>
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</tbody>
</table>

Each friend gets 4 lollipops.

Dividing with 2, 5, and 9
To divide by 2, 5, and 9, just take your basic multiplication facts and shake them up a little. To find 63 ÷ 9, think: 9 times what number equals 63? 9 x 7 = 63. So, 63 ÷ 9 = 7.

Special Quotients
Special numbers require special treatment! You cannot divide by zero – not ever! You can say 0 ÷ 2 = 0, but you can never say 2 ÷ 0. You’ll be in good shape if you memorize these rules for dividing by 0 and 1.
### Division rules for 0

- 0 divided by any number (except 0) is 0.
- You cannot divide by 0 (0 can never be a “divisor”).

Look at the fact family for 0, 0, and 4:

\[ 4 \times 0 = 0 \quad 0 \div 4 = 0 \]
\[ 0 \times 4 = 0 \quad 4 \div 0 = \text{Can’t do it!} \]

You can also write:

\[ \underline{0} \quad 4) \underline{0} \quad \text{but you can’t write } 0) \underline{4}. \]

### Division rules for 1

- Any number divided by 1 is that number.
- Any number divided by itself (except 0) is 1.

Look at the fact family for 1, 8, and 8:

\[ 8 \times 1 = 8 \quad 8 \div 1 = 8 \]
\[ 1 \times 8 = 8 \quad 8 \div 8 = 1 \]

---

### Dividing with 3, 4, 6, 7, and 8

Multiplication can help you divide by 3, 4, 5, 6, 7, and 8. What’s \( 28 \div 7 \)? Think: 7 times what number equals 28? \( 7 \times 4 = 28 \). So, \( 28 \div 7 = 4 \).

If you’re consistently finding the wrong quotients, it may be that you don’t have your multiplication facts down. Remember, there is no trick to memorizing multiplication facts; you just have to do it!

### Exploring Even and Odd Numbers

No matter how big a number is, if it has 0, 2, 4, 6, or 8 in the ones place, it’s even. If it has 1, 3, 5, 7, or 9 in the ones place, it’s odd. For example: 42,000,003 is an odd number.

Even numbers can be divided into two equal groups. Odd numbers cannot be divided into two equal groups. 1 will always be left over.
**Division Facts**

Danielle has 20 figurines. She wants to put the figurines in equal numbers on four shelves. How many figurines can she put on a shelf?

We use division to show how many equal groups or how many items are in each group.

Think: 20 figurines divided among 4 shelves = \( n \). \( 20 \div 4 = n \)

You know that \( 4 \times 5 = 20 \), so \( 20 \div 4 = 5 \). \( n = 5 \)

Danielle can put 5 figurines on each shelf.

A fact family shows all the related multiplication and division facts for a set of numbers. This is the fact family for 4, 5, and 20.

\[
\begin{align*}
4 \times 5 &= 20 \\
5 \times 4 &= 20 \\
20 \div 4 &= 5 \\
20 \div 5 &= 4 
\end{align*}
\]

**Write the family of facts for each set of numbers.**

1. \(25 \div 5\)  
2. \(16 \div 4\)  
3. \(10 \div 2\)  
4. \(42 \div 6\)  
5. \(45 \div 9\)

6. \(2 \overline{)8}\)  
7. \(6 \overline{)30}\)  
8. \(4 \overline{)12}\)  
9. \(7 \overline{)28}\)  
10. \(5 \overline{)35}\)

**Algebra** Find each missing number.

14. \(27 \div 3 = n\)  
15. \(a \times 3 = 6\)  
16. \(10 \times m = 50\)  
17. \(64 \div u = 8\)
Division Facts

Danielle has 20 figurines. She wants to put the figurines in equal numbers on four shelves. How many figurines can she put on a shelf?

We use division to show how many equal groups or how many items are in each group.

Think: 20 figurines divided among 4 shelves = \( n \). \( 20 \div 4 = n \)

You know that \( 4 \times 5 = 20 \), so \( 20 \div 4 = 5 \). \( n = 5 \)

Danielle can put 5 figurines on each shelf.

A fact family shows all the related multiplication and division facts for a set of numbers. This is the fact family for 4, 5, and 20.

\[
\begin{align*}
4 \times 5 &= 20 \\
5 \times 4 &= 20 \\
20 \div 4 &= 5 \\
20 \div 5 &= 4
\end{align*}
\]

1. 25 \( \div \) 5 = 5
2. 16 \( \div \) 4 = 4
3. 10 \( \div \) 2 = 5
4. 42 \( \div \) 6 = 7
5. 45 \( \div \) 9 = 5

6. 2)8
7. 6)30
8. 4)12
9. 7)28
10. 5)35

Write the family of facts for each set of numbers.

11. 2, 8, 16
   \[
   \begin{align*}
   2 \times 8 &= 16 \\
   8 \times 2 &= 16 \\
   16 \div 8 &= 2 \\
   16 \div 2 &= 8
   \end{align*}
   \]

12. 3, 6, 18
   \[
   \begin{align*}
   3 \times 6 &= 18 \\
   6 \times 3 &= 18 \\
   18 \div 3 &= 6 \\
   18 \div 6 &= 3
   \end{align*}
   \]

13. 3, 9, 27
   \[
   \begin{align*}
   3 \times 9 &= 27 \\
   9 \times 3 &= 27 \\
   27 \div 3 &= 9 \\
   27 \div 9 &= 3
   \end{align*}
   \]

Algebra  Find each missing number.

14. \( 27 \div 3 = n \)
   \[
   n = 9
   \]

15. \( a \times 3 = 6 \)
   \[
   a = 2
   \]

16. \( 10 \times m = 50 \)
   \[
   m = 5
   \]

17. \( 64 \div u = 8 \)
   \[
   u = 8
   \]
Division Facts

1. \( 64 \div 8 \)
2. \( 81 \div 9 \)
3. \( 72 \div 9 \)
4. \( 42 \div 6 \)
5. \( 54 \div 6 \)

Write the family of facts for each set of numbers.

6. 6, 5, 30
7. 6, 4, 24
8. 3, 7, 21

9. 7, 8, 56
10. 7, 6, 42

11. Art wants to display 35 of his origami figures by hanging an equal number on each of 5 mobiles. How many figures will Art hang from each mobile?

12. Jack has 40 trading cards that he would like to give to his 5 best friends. If he shares them equally, how many cards will he give to each?

13. Algebra The dividend is 81, the quotient is 9, and the divisor is \( n \). What is \( n \)?

Test Prep Circle the correct letter for the answer.

14. If \( 45 \div 9 = 5 \), which facts are related?

A 5 \( \times 9 = 45 \)  
B 9 \( \times 4 = 36 \)
C 9 \( \times 5 = 45 \)  
D Both A and C
Division Facts

1. \(64 \div 8 = 8\)
2. \(81 \div 9 = 9\)
3. \(72 \div 9 = 8\)
4. \(42 \div 6 = 7\)
5. \(54 \div 6 = 9\)

Write the family of facts for each set of numbers.

6. 6, 5, 30
   - \(6 \times 5 = 30\)
   - \(5 \times 6 = 30\)
   - \(30 \div 6 = 5\)
   - \(30 \div 5 = 6\)
7. 6, 4, 24
   - \(6 \times 4 = 24\)
   - \(4 \times 6 = 24\)
   - \(24 \div 6 = 4\)
   - \(24 \div 4 = 6\)
8. 3, 7, 21
   - \(3 \times 7 = 21\)
   - \(7 \times 3 = 21\)
   - \(21 \div 3 = 7\)
   - \(21 \div 7 = 3\)

9. 7, 8, 56
   - \(7 \times 8 = 56\)
   - \(8 \times 7 = 56\)
   - \(56 \div 7 = 8\)
   - \(56 \div 8 = 7\)

10. 7, 6, 42
    - \(7 \times 6 = 42\)
    - \(6 \times 7 = 42\)
    - \(42 \div 7 = 6\)
    - \(42 \div 6 = 7\)

11. Art wants to display 35 of his origami figures by hanging an equal number on each of 5 mobiles. How many figures will Art hang from each mobile?

    7 figures

12. Jack has 40 trading cards that he would like to give to his 5 best friends. If he shares them equally, how many cards will he give to each?

    8 cards

13. Algebra The dividend is 81, the quotient is 9, and the divisor is \(n\). What is \(n\)?

    \(n = 9\)

Test Prep Circle the correct letter for the answer.

14. If \(45 \div 9 = 5\), which facts are related?

    A \(5 \times 9 = 45\)  
    B \(9 \times 4 = 36\)  
    C \(9 \times 5 = 45\)  
    D Both A and C

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Name ____________________________________________

Dividing with 2, 5, and 9

Find each quotient.

1. \(36 \div 4\)  
2. \(63 \div 9\)  
3. \(25 \div 5\)  
4. \(40 \div 5\)  
5. \(16 \div 2\)  
6. \(81 \div 9\)  
7. \(35 \div 7\)  
8. \(45 \div 9\)  
9. \(30 \div 5\)  
10. \(12 \div 2\)  
11. \(14 \div 2\)  
12. \(45 \div 5\)  
13. \(9 \div 1\)  
14. \(72 \div 9\)  
15. \(35 \div 5\)  
16. \(5 \div 5\)  
17. \(63 \div 7\)  
18. \(18 \div 9\)  
19. \(18 \div 2\)  
20. \(54 \div 6\)  
21. \(14 \div 7\)  

22. \(6 \overline{)30}\)  
23. \(5 \overline{)20}\)  
24. \(4 \overline{)36}\)  
25. \(9 \overline{)36}\)  

26. \(9 \overline{)81}\)  
27. \(2 \overline{)14}\)  
28. \(5 \overline{)30}\)  
29. \(8 \overline{)72}\)  

30. \(5 \overline{)45}\)  
31. \(9 \overline{)72}\)  
32. \(5 \overline{)40}\)  
33. \(9 \overline{)18}\)  

34. \(2 \overline{)10}\)  
35. \(9 \overline{)45}\)  
36. \(5 \overline{)25}\)  
37. \(9 \overline{)54}\)  

38. \(9 \overline{)45}\)  
39. \(3 \overline{)27}\)  
40. \(4 \overline{)20}\)  
41. \(9 \overline{)63}\)

42. The divisor is 9; the dividend is 36. What is the quotient?  
43. The divisor is 5; the dividend is 45. What is the quotient?  
44. The dividend is 8; the divisor is 2. What is the quotient?  
45. The dividend is 36; the divisor is 9. What is the quotient?  
46. 12 is the dividend; 2 is the divisor. What is the quotient?  
47. The dividend is 25; the divisor is 5. What is the quotient?  
48. The dividend is 9; the divisor is 9. What is the quotient?  
49. The dividend is 63; the divisor is 9. What is the quotient?  

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Answer Key

Dividing with 2, 5, and 9
Find each quotient.

1. \(36 \div 4 \) \[\frac{9}{4}\]
2. \(63 \div 9 \) \[\frac{7}{9}\]
3. \(25 \div 5 \) \[\frac{5}{5}\]
4. \(40 \div 5 \) \[\frac{8}{5}\]
5. \(16 \div 2 \) \[\frac{8}{2}\]
6. \(81 \div 9 \) \[\frac{9}{9}\]
7. \(35 \div 7 \) \[\frac{5}{7}\]
8. \(45 \div 9 \) \[\frac{5}{9}\]
9. \(30 \div 5 \) \[\frac{6}{5}\]
10. \(12 \div 2 \) \[\frac{6}{2}\]
11. \(14 \div 2 \) \[\frac{7}{2}\]
12. \(45 \div 5 \) \[\frac{9}{5}\]
13. \(9 \div 1 \) \[\frac{9}{1}\]
14. \(72 \div 9 \) \[\frac{8}{9}\]
15. \(35 \div 5 \) \[\frac{7}{5}\]
16. \(5 \div 5 \) \[\frac{1}{5}\]
17. \(63 \div 7 \) \[\frac{9}{7}\]
18. \(18 \div 9 \) \[\frac{2}{9}\]
19. \(18 \div 2 \) \[\frac{9}{2}\]
20. \(54 \div 6 \) \[\frac{9}{6}\]
21. \(14 \div 7 \) \[\frac{2}{7}\]

22. \(6 \div 30 \) \[\frac{5}{30}\]
23. \(5 \div 20 \) \[\frac{4}{20}\]
24. \(4 \div 36 \) \[\frac{9}{36}\]
25. \(9 \div 36 \) \[\frac{4}{36}\]

26. \(9 \div 81 \) \[\frac{9}{81}\]
27. \(2 \div 14 \) \[\frac{7}{14}\]
28. \(5 \div 30 \) \[\frac{6}{30}\]
29. \(8 \div 72 \) \[\frac{9}{72}\]

30. \(5 \div 45 \) \[\frac{9}{45}\]
31. \(9 \div 72 \) \[\frac{8}{72}\]
32. \(5 \div 40 \) \[\frac{8}{40}\]
33. \(9 \div 18 \) \[\frac{2}{18}\]

34. \(2 \div 10 \) \[\frac{5}{10}\]
35. \(9 \div 45 \) \[\frac{5}{45}\]
36. \(5 \div 25 \) \[\frac{5}{25}\]
37. \(9 \div 54 \) \[\frac{6}{54}\]

38. \(9 \div 45 \) \[\frac{5}{45}\]
39. \(3 \div 27 \) \[\frac{9}{27}\]
40. \(4 \div 20 \) \[\frac{5}{20}\]
41. \(9 \div 63 \) \[\frac{7}{63}\]

42. The divisor is 9; the dividend is 36. What is the quotient? \[\frac{4}{9}\]
43. The divisor is 5; the dividend is 45. What is the quotient? \[\frac{9}{5}\]
44. The dividend is 8; the divisor is 2. What is the quotient? \[\frac{4}{2}\]
45. The dividend is 36; the divisor is 9. What is the quotient? \[\frac{4}{9}\]
46. 12 is the dividend; 2 is the divisor. What is the quotient? \[\frac{6}{2}\]
47. The dividend is 25; the divisor is 5. What is the quotient? \[\frac{5}{5}\]
48. The dividend is 9; the divisor is 9. What is the quotient? \[\frac{1}{9}\]
49. The dividend is 63; the divisor is 9. What is the quotient? \[\frac{7}{9}\]
Special Quotients
Find each quotient.

1. \(27 \div 3 = \) _____
2. \(1 \div 1 = \) _____
3. \(0 \div 6 = \) _____

4. \(16 \div 4 = \) _____
5. \(5 \div 1 = \) _____
6. \(0 \div 3 = \) _____

7. \(28 \div 28 = \) _____
8. \(40 \div 8 = \) _____
9. \(42 \div 7 = \) _____

10. \(21 \div 7 = \) _____
11. \(8 \div 1 = \) _____
12. \(9 \div 9 = \) _____

13. \(1)7\)
14. \(4)0\)
15. \(1)16\)
16. \(12)0\)

17. \(6)36\)
18. \(8)8\)
19. \(9)27\)
20. \(7)7\)

21. \(1)11\)
22. \(4)24\)
23. \(1)8\)
24. \(6)6\)

25. Find the quotient of 4 divided by 4. _____
26. Find the quotient of 0 divided by 9. _____
27. Find the quotient of 6 divided by 1. _____

28. Divide 5 by 5. _____
29. Divide 0 by 12. _____
30. Divide 2 by 1. _____

31. Explain which rule you would use to help you find \(0 \div 81\).

32. Explain which rule you would use to help you find \(80 \div 1\).

33. Write a fact family for this set of numbers: 3, 1, 3.

34. Write a fact family for this set of numbers: 5, 5, 1.
**Special Quotients**

Find each quotient.

1. $27 ÷ 3 = 9$
2. $1 ÷ 1 = 1$
3. $0 ÷ 6 = 0$
4. $16 ÷ 4 = 4$
5. $5 ÷ 1 = 5$
6. $0 ÷ 3 = 0$
7. $28 ÷ 28 = 1$
8. $40 ÷ 8 = 5$
9. $42 ÷ 7 = 6$
10. $21 ÷ 7 = 3$
11. $8 ÷ 1 = 8$
12. $9 ÷ 9 = 1$

13. $1 ÷ 7 = 0$
14. $4 ÷ 0 = 16$
15. $1 ÷ 16 = 0$
16. $12 ÷ 0 = 6$
17. $6 ÷ 36 = 1$
18. $8 ÷ 8 = 3$
19. $9 ÷ 27 = 1$
20. $7 ÷ 7 = 1$
21. $1 ÷ 11 = 1$
22. $4 ÷ 24 = 6$
23. $1 ÷ 8 = 8$
24. $6 ÷ 6 = 1$

25. Find the quotient of 4 divided by 4. 1
26. Find the quotient of 0 divided by 9. 0
27. Find the quotient of 6 divided by 1. 6
28. Divide 5 by 5. 1
29. Divide 0 by 12. 0
30. Divide 2 by 1. 2

31. Explain which rule you would use to help you find $0 ÷ 81$.
   **0 divided by any number (except 0) is 0.**

32. Explain which rule you would use to help you find $80 ÷ 1$.
   **Any number divided by 1 is that number.**

33. Write a fact family for this set of numbers: 3, 1, 3.
   $3 \times 1 = 3, 1 \times 3 = 3, 3 ÷ 1 = 3, 3 ÷ 3 = 1$

34. Write a fact family for this set of numbers: 5, 5, 1.
   $5 \times 1 = 5, 1 \times 5 = 5, 5 ÷ 1 = 5, 5 ÷ 5 = 1$
Dividing with 3 and 4
Find each quotient.

1. $28 \div 4 = \underline{7}$
2. $18 \div 3 = \underline{6}$
3. $20 \div 4 = \underline{5}$

4. $16 \div 4 = \underline{4}$
5. $21 \div 3 = \underline{7}$
6. $8 \div 4 = \underline{2}$

7. $24 \div 3 = \underline{8}$
8. $27 \div 3 = \underline{9}$
9. $9 \div 3 = \underline{3}$

10. $32 \div 4 = \underline{8}$
11. $3 \div 3 = \underline{1}$
12. $21 \div 3 = \underline{7}$

13. $0 \div 3 = \underline{0}$
14. $0 \div 4 = \underline{0}$
15. $12 \div 4 = \underline{3}$

16. $3 \div 3 = \underline{9}$
17. $9 \div 3 = \underline{3}$
18. $4 \div 3 = \underline{1}$
19. $3 \div 3 = \underline{1}$

20. $7 \div 3 = \underline{2}$
21. $7 \div 2 = \underline{3}$
22. $9 \div 3 = \underline{3}$
23. $4 \div 3 = \underline{1}$

24. $8 \div 2 = \underline{4}$
25. $8 \div 3 = \underline{2}$
26. $3 \div 2 = \underline{1}$
27. $3 \div 2 = \underline{1}$

28. $2 \div 2 = \underline{1}$
29. $3 \div 2 = \underline{1}$
30. $3 \div 2 = \underline{1}$
31. $3 \div 2 = \underline{1}$

32. $6 \div 4 = \underline{1}$
33. $4 \div 4 = \underline{1}$
34. $1 \div 3 = \underline{1}$
35. $4 \div 3 = \underline{1}$

36. Divide 18 by 3. _____
37. Divide 16 by 4. _____
38. Divide 28 by 4. _____
39. Divide 21 by 3. _____

40. What multiplication fact can help you find $15 \div 3$? _____________
41. What multiplication fact can help you find $36 \div 4$? _____________
### Dividing with 3 and 4

Find each quotient.

1. \(28 \div 4 = \underline{7}\)  
2. \(18 \div 3 = \underline{6}\)  
3. \(20 \div 4 = \underline{5}\)  
4. \(16 \div 4 = \underline{4}\)  
5. \(21 \div 3 = \underline{7}\)  
6. \(8 \div 4 = \underline{2}\)  
7. \(24 \div 3 = \underline{8}\)  
8. \(27 \div 3 = \underline{9}\)  
9. \(9 \div 3 = \underline{3}\)  
10. \(32 \div 4 = \underline{8}\)  
11. \(3 \div 3 = \underline{1}\)  
12. \(21 \div 3 = \underline{7}\)  
13. \(0 \div 3 = \underline{0}\)  
14. \(0 \div 4 = \underline{0}\)  
15. \(12 \div 4 = \underline{3}\)

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<td>(3)</td>
<td>(4)</td>
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36. Divide 18 by 3. \(\underline{6}\)  
37. Divide 16 by 4. \(\underline{4}\)  
38. Divide 28 by 4. \(\underline{7}\)  
39. Divide 21 by 3. \(\underline{7}\)  
40. What multiplication fact can help you find \(15 \div 3\)? \(5 \times 3 = 15\)  
41. What multiplication fact can help you find \(36 \div 4\)? \(9 \times 4 = 36\)
Dividing with 6, 7, and 8
Find each quotient.

1. $0 \div 8 = \underline{0}$
2. $6 \div 6 = \underline{1}$
3. $28 \div 7 = \underline{4}$
4. $24 \div 8 = \underline{3}$
5. $18 \div 6 = \underline{3}$
6. $54 \div 6 = \underline{9}$
7. $36 \div 6 = \underline{6}$
8. $30 \div 6 = \underline{5}$
9. $56 \div 7 = \underline{8}$
10. $12 \div 6 = \underline{2}$
11. $12 \div 6 = \underline{2}$
12. $24 \div 6 = \underline{4}$
13. $14 \div 7 = \underline{2}$
14. $56 \div 8 = \underline{7}$
15. $48 \div 8 = \underline{6}$

16. $8\sqrt{64}$
17. $6\sqrt{48}$
18. $5\sqrt{40}$
19. $7\sqrt{63}$

20. $8\sqrt{16}$
21. $6\sqrt{42}$
22. $7\sqrt{49}$
23. $8\sqrt{72}$

24. $9\sqrt{72}$
25. $7\sqrt{7}$
26. $3\sqrt{24}$
27. $7\sqrt{0}$

28. $8\sqrt{40}$
29. $7\sqrt{42}$
30. $7\sqrt{21}$
31. $8\sqrt{32}$

32. $2\sqrt{16}$
33. $9\sqrt{63}$
34. $9\sqrt{54}$
35. $4\sqrt{28}$

36. Divide 63 by 7. ________
37. Divide 54 by 6. ________
38. Divide 35 by 7. ________
39. Divide 48 by 8. ________
40. Divide 56 by 8. ________
41. Divide 64 by 8. ________

42. What multiplication fact can help you find $40 \div 8$? ______________
43. What multiplication fact can help you find $63 \div 9$? ______________
Dividing with 6, 7, and 8

Find each quotient.

1. \(0 \div 8 = \underline{0}\)  
2. \(6 \div 6 = \underline{1}\)  
3. \(28 \div 7 = \underline{4}\)  
4. \(24 \div 8 = \underline{3}\)  
5. \(18 \div 6 = \underline{3}\)  
6. \(54 \div 6 = \underline{9}\)  
7. \(36 \div 6 = \underline{6}\)  
8. \(30 \div 6 = \underline{5}\)  
9. \(56 \div 7 = \underline{8}\)  
10. \(12 \div 6 = \underline{2}\)  
11. \(12 \div 6 = \underline{2}\)  
12. \(24 \div 6 = \underline{4}\)  
13. \(14 \div 7 = \underline{2}\)  
14. \(56 \div 8 = \underline{7}\)  
15. \(48 \div 8 = \underline{6}\)  
16. \(8 \div 64 = \underline{8}\)  
17. \(6 \div 48 = \underline{8}\)  
18. \(5 \div 40 = \underline{8}\)  
19. \(7 \div 63 = \underline{9}\)  
20. \(8 \div 16 = \underline{2}\)  
21. \(6 \div 42 = \underline{7}\)  
22. \(7 \div 49 = \underline{7}\)  
23. \(8 \div 72 = \underline{9}\)  
24. \(9 \div 72 = \underline{8}\)  
25. \(7 \div 7 = \underline{1}\)  
26. \(3 \div 24 = \underline{8}\)  
27. \(7 \div 0 = \underline{0}\)  
28. \(8 \div 40 = \underline{5}\)  
29. \(7 \div 42 = \underline{6}\)  
30. \(7 \div 21 = \underline{3}\)  
31. \(8 \div 32 = \underline{4}\)  
32. \(2 \div 16 = \underline{8}\)  
33. \(9 \div 63 = \underline{7}\)  
34. \(9 \div 54 = \underline{6}\)  
35. \(4 \div 28 = \underline{7}\)  
36. Divide 63 by 7. \(\underline{9}\)  
37. Divide 54 by 6. \(\underline{9}\)  
38. Divide 35 by 7. \(\underline{5}\)  
39. Divide 48 by 8. \(\underline{6}\)  
40. Divide 56 by 8. \(\underline{7}\)  
41. Divide 64 by 8. \(\underline{8}\)  
42. What multiplication fact can help you find \(40 \div 8\)? \(8 \times 5 = 40\)  
43. What multiplication fact can help you find \(63 \div 9\)? \(9 \times 7 = 63\)
Exploring Even and Odd Numbers

1. What digits do even numbers have in the ones place?

   ________________

2. What digits do odd numbers have in the ones place?

   ________________

Write *odd* or *even* for each. You may use counters or draw pictures.

3. __________
   __________

4. __________
   __________

5. __________
   __________

6. __________
   __________

7. 63 __________
   8. 33 __________

9. 98 __________
   10. 72 __________

11. 24 __________
    12. 45 __________

13. Start with 33 and name the next 4 odd numbers. Explain how you know which numbers are odd.

   ________________________________

14. If you add 5 even numbers, will the sum be odd or even? __________

15. If you add 2 odd numbers, will the sum be odd or even? __________

16. If you add 4 odd numbers, will the sum be odd or even? __________

Complete the pattern. Then write *odd* or *even* for each group.

17. 317, 315, 313, __________, __________, __________ __________

18. 2,074; 2,076; 2,078; __________; __________; __________ __________

19. 502, 504, 506, __________, __________, __________ __________
Exploring Even and Odd Numbers

1. What digits do even numbers have in the ones place? 
   **0, 2, 4, 6, or 8**

2. What digits do odd numbers have in the ones place? 
   **1, 3, 5, 7, or 9**

Write **odd** or **even** for each. You may use counters or draw pictures.

3. **Even**

4. **Odd**

5. **Even**

6. **Odd**

7. 63 **Odd**

8. 33 **Odd**

9. 98 **Even**

10. 72 **Even**

11. 24 **Even**

12. 45 **Odd**

13. Start with 33 and name the next 4 odd numbers. Explain how you know which numbers are odd.
   **35, 37, 39, 41. Not evenly divisible by 2.**

14. If you add 5 even numbers, will the sum be odd or even? **Even**

15. If you add 2 odd numbers, will the sum be odd or even? **Even**

16. If you add 4 odd numbers, will the sum be odd or even? **Even**

Complete the pattern. Then write **odd** or **even** for each group.

17. 317, 315, 313, **311**, **309**, **307** **Odd**

18. 2,074; 2,076; 2,078; **2,080**; **2,082**; **2,084** **Even**

19. 502, 504, 506, **508**, **510**, **512** **Even**
Dividing by 1-Digit Divisors: Math Hints and Reminders

Dividing Multiples of 10, 100, and 1,000
Once you have a basic division fact down, like $6 \div 3 = 2$, dividing tens and hundreds is just a matter of tacking on the right number of zeros! Take a look at the pattern:

| 6 ÷ 3 = 2 | 6 ones ÷ 3 = 2 ones |
| 60 ÷ 3 = 20 | 6 tens ÷ 3 = 2 tens |
| 600 ÷ 3 = 200 | 6 hundreds ÷ 3 = 2 hundreds |

To find the quotient for $320 \div 4$, find the basic fact ($8 \times 4 = 32$), then count the number of zeros in the dividend and tack them onto the quotient: $3200 \div 4 = 80$.

Estimating Quotients
Once you have your basic division facts down, estimating the answers to bigger problems is just a matter of tweaking the dividend, dividing, and tacking on the right number of zeros.

To estimate the quotient of $436 \div 5$

| Underline the first two numbers in the dividend → | 436 ÷ 5 |
| Find the closest number that 5 goes into evenly → | You could choose 40 or 45 |
| Write the basic fact → | $40 \div 5 = 8$ or $45 \div 5 = 9$ |
| Add a 0 to the basic fact for every digit not underlined → | $400 \div 5 = 80$ or $450 \div 5 = 90$ |

The answer could be either 80 or 90. 80 is less than the exact answer, because 40 is less than 43. 90 is greater than the exact answer, because 45 is greater than 43.

Exploring Division with Remainders
Numbers don’t always divide evenly – sometimes there are leftovers or remainders. To help you get the hang of how division with remainders works, break out the beans, pasta, or pennies, and start counting!

<table>
<thead>
<tr>
<th>Find $32 \div 5$</th>
</tr>
</thead>
<tbody>
<tr>
<td>What You See</td>
</tr>
<tr>
<td>Divvy 32 counters into 5 equal groups.</td>
</tr>
<tr>
<td>• How many counters are in each group? (6)</td>
</tr>
<tr>
<td>• How many counters are left over? (2)</td>
</tr>
<tr>
<td>• The quotient is 6. The remainder is 2.</td>
</tr>
</tbody>
</table>

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**Dividing Multidigit Dividends**

A flow chart can really help you remember the steps involved in solving a division problem.

```
Divide ➔ Multiply ➔ Subtract ➔ Compare ➔ Bring Down
```

Follow the chart as you divide, pointing to or saying each step as you work. Give this one a try:

<table>
<thead>
<tr>
<th>Find $67 \div 3$</th>
<th>Bring down the ones and divide.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 is greater than 3, so start dividing in the tens place.</td>
<td>22 R1</td>
</tr>
<tr>
<td>2 3) 67</td>
<td>3) 67</td>
</tr>
<tr>
<td>Multiply. 3 x 2 = 6</td>
<td>_6_</td>
</tr>
<tr>
<td>Subtract. 6 – 6 = 0</td>
<td>07 Multiply. 3 x 2 = 6</td>
</tr>
<tr>
<td>Compare the remainder with the divisor. 0 &lt; 3</td>
<td>_6_ Subtract. 7 – 6 = 1</td>
</tr>
<tr>
<td>0</td>
<td>1 Compare. 1 &lt; 3</td>
</tr>
</tbody>
</table>

If the dividend has more than two numbers, just repeat the steps until there are no more numbers to bring down.

**2- or 3-Digit Quotients**

Remember, you always start solving a division problem by looking at the number in the greatest place of the dividend and comparing this number to the divisor. If this number is less than the divisor, move over one place to the right and look at the number again. Take $546 \div 6$ for example:

5 is less than 6, so you would begin dividing in the tens place. Your answer will have 2 digits. Think: How many times does 6 go into 54? $91 \quad 6)546$
Zeros in the Quotient
It’s time to brush off an old multiplication fact: 0 \times \text{any number} = 0. This fact will come in handy when you’re cruising through a division problem and you run into a number that’s less than the divisor.

Find $527 \div 5$

<table>
<thead>
<tr>
<th>Divide the hundreds.</th>
<th>There aren’t enough tens to divide. So think: 5 goes into 2 how many times? 0 times.</th>
<th>Bring down the ones and divide.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1 \underline{527}$</td>
<td>$10 \underline{527}$</td>
<td>$105 \underline{R2}$</td>
</tr>
<tr>
<td>$-5$</td>
<td>$-5\underline{527}$</td>
<td>$-5\underline{527}$</td>
</tr>
<tr>
<td>$0$</td>
<td>$0\underline{527}$</td>
<td>$0\underline{527}$</td>
</tr>
</tbody>
</table>

Bring down the tens and divide... **But wait!** 2 is less than 5.

<table>
<thead>
<tr>
<th>Multiply. 5 x 0 = 0</th>
<th>Subtract. 2 - 0 = 2</th>
<th>Compare. 2 &lt; 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>$27$</td>
<td>$25$</td>
<td>$2$</td>
</tr>
</tbody>
</table>

Exploring Division with Money and Dividing Money Amounts
Dividing money is just like dividing other numbers, but with an added twist! When you’re done dividing, “bring up” the dollar sign and the decimal point, and, if necessary, write a 0 between them: $\text{0.40}$ $\text{0.40}$

Finding Averages
To find the mean – or average – of a group of numbers, you need to add all the numbers in the group and then divide that sum by the number of members in the group.

Find the mean of 12, 16, and 8.

<table>
<thead>
<tr>
<th>Add: 12</th>
<th>Divide: 3$\div$36</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>$3\underline{36}$</td>
</tr>
<tr>
<td>+8</td>
<td>$6\underline{36}$</td>
</tr>
<tr>
<td>36</td>
<td>$0\underline{36}$</td>
</tr>
</tbody>
</table>

There are 3 numbers in the group. Their sum is 36.

Divide the sum (36) by the number of members in the group (3).

The mean for this set of numbers is 12.
Exploring Divisibility

When a number can divide another number evenly, without a remainder, it is divisible by that number. Memorizing a few rules about divisibility can really save you time in solving division problems. Here’s a table of divisibility rules for you to refer to and memorize.

<table>
<thead>
<tr>
<th>#</th>
<th>Rule</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Even numbers – numbers that end in 0, 2, 4, 6, or 8 – are divisible by 2.</td>
<td>398 is divisible by 2 because it’s an even number.</td>
</tr>
<tr>
<td>3</td>
<td>A number is divisible by 3 when the sum of its digits is divisible by 3.</td>
<td>246 divisible by 3 because $2 + 4 + 6 = 12$. And 12 is divisible by 3.</td>
</tr>
<tr>
<td>4</td>
<td>A number is divisible by 4 if the number formed by the tens and ones place is divisible by 4.</td>
<td>532 is divisible by 4 because 32 is divisible by 4.</td>
</tr>
<tr>
<td>5</td>
<td>A number is divisible by 5 when it ends in 5 or 0.</td>
<td>940 is divisible by 5 because it ends in 0.</td>
</tr>
<tr>
<td>6</td>
<td>A number is divisible by 6 if the number is also divisible by 2 and 3.</td>
<td>246. You know it’s divisible by 3 (see above). It’s also divisible by 2 because it’s an even number. So, it’s divisible by 6.</td>
</tr>
<tr>
<td>9</td>
<td>A number is divisible by 9 when the sum of its digits is divisible by 9.</td>
<td>747 is divisible by 9 because $7 + 4 + 7 = 18$. And 18 is divisible by 9.</td>
</tr>
<tr>
<td>10</td>
<td>A number is divisible by 10 when it is divisible by both 2 and 5, and ends in a 0.</td>
<td>660 is divisible by 10 because it ends in a 0.</td>
</tr>
</tbody>
</table>
Mental Math: Dividing Multiples of 10, 100, and 1,000

Find $16,000 \div 8$.

Use a basic fact and look for a pattern with zeros.

$16 \div 8 = 2$
$160 \div 8 = 20$
$1,600 \div 8 = 200$
$16,000 \div 8 = 2,000$

$16,000 \div 8 = 2,000 \leftarrow \text{quotient}$

$\text{dividend} \div \text{divisor}$

Check by using related multiplication sentences.

$2 \times 8 = 16 \rightarrow 16 \div 8 = 2$
$200 \times 8 = 1,600 \rightarrow 1,600 \div 8 = 200$
$20 \times 8 = 160 \rightarrow 160 \div 8 = 20$
$2,000 \times 8 = 16,000 \rightarrow 16,000 \div 8 = 2,000$

1. $90 \div 3$
2. $320 \div 4$
3. $4,800 \div 6$
4. $54,000 \div 9$

$\underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad}$

5. $60 \div 2$
6. $800 \div 4$
7. $40,000 \div 5$
8. $72,000 \div 8$

$\underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad}$

9. A sticker maker packed 45,000 stickers in 9 boxes. How many stickers were in each box?

$\underline{\quad}$

10. A cereal company packs 6 boxes of cereal in a crate. How many crates are needed to store 3,000 boxes of cereal?

$\underline{\quad}$

11. Marty has 420 stamps in his collection. If he puts 7 stickers on each page of his stamp album, how many pages will he use?

$\underline{\quad}$
Mental Math: Dividing Multiples of 10, 100, and 1,000

Find 16,000 ÷ 8.

Use a basic fact and look for a pattern with zeros.

\[
\begin{align*}
16 \div 8 &= 2 \\
160 \div 8 &= 20 \\
1,600 \div 8 &= 200 \\
16,000 \div 8 &= 2,000 \\
\end{align*}
\]

\[
16,000 \div 8 = 2,000 \quad \text{quotient}
\]

\[
\begin{align*}
dividend &\quad \text{divisor} \\
16,000 &\quad 8
\end{align*}
\]

Check by using related multiplication sentences.

\[
\begin{align*}
2 \times 8 &= 16 & 16 \div 8 &= 2 & 200 \times 8 &= 1,600 & 1,600 \div 8 &= 200 \\
20 \times 8 &= 160 & 160 \div 8 &= 20 & 2,000 \times 8 &= 16,000 & 16,000 \div 8 &= 2,000
\end{align*}
\]

1. 90 ÷ 3 = 30
2. 320 ÷ 4 = 80
3. 4,800 ÷ 6 = 800
4. 54,000 ÷ 9 = 6,000
5. 60 ÷ 2 = 30
6. 800 ÷ 4 = 200
7. 40,000 ÷ 5 = 8,000
8. 72,000 ÷ 8 = 9,000

9. A sticker maker packed 45,000 stickers in 9 boxes. How many stickers were in each box?

5,000 stickers

10. A cereal company packs 6 boxes of cereal in a crate. How many crates are needed to store 3,000 boxes of cereal?

500 crates

11. Marty has 420 stamps in his collection. If he puts 7 stickers on each page of his stamp album, how many pages will he use?

60 pages

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Estimating Quotients

Estimate each quotient. Write the numbers you used.

1. $273 \div 3$
2. $77 \div 4$
3. $291 \div 7$

4. $59 \div 6$
5. $122 \div 3$
6. $439 \div 5$

7. $328 \div 4$
8. $2,350 \div 8$
9. $7,000 \div 9$

10. Math Reasoning  A store has a total of 231 golf balls. There are 3 golf balls in a package. About how many packages of golf balls are there?

11. Angelina has 125 peonies in her flower shop. About how many bouquets of 6 peonies can she make?

Test Prep  Circle the correct letter for each answer.

12. Which expression would give the best estimate for $46 \div 5$?
   
   A  $50 \div 5$
   B  $45 \div 5$
   C  $35 \div 5$
   D  $30 \div 5$

13. Which expression would give the best estimate for $87 \div 9$?
   
   F  $54 \div 9$
   G  $63 \div 9$
   H  $81 \div 9$
   J  $90 \div 9$
Estimating Quotients

Estimate each quotient. Write the numbers you used. **Answers may vary.**

1. \(273 \div 3\)
   - \(90; 270 \div 3\)

2. \(77 \div 4\)
   - \(20; 80 \div 4\)

3. \(291 \div 7\)
   - \(40; 280 \div 7\)

4. \(59 \div 6\)
   - \(10; 60 \div 6\)

5. \(122 \div 3\)
   - \(40; 120 \div 3\)

6. \(439 \div 5\)
   - \(90; 450 \div 5\)

7. \(328 \div 4\)
   - \(80; 320 \div 4\)

8. \(2,350 \div 8\)
   - \(300; 2,400 \div 8\)

9. \(7,000 \div 9\)
   - \(800; 7,200 \div 9\)

10. **Math Reasoning** A store has a total of 231 golf balls. There are 3 golf balls in a package. About how many packages of golf balls are there?
    - **About 80 packages**

11. Angelina has 125 peonies in her flower shop. About how many bouquets of 6 peonies can she make?
    - **About 20 bouquets**

**Test Prep** Circle the correct letter for each answer.

12. Which expression would give the best estimate for \(46 \div 5\)?
    - **A** \(50 \div 5\)
    - **B** \(45 \div 5\)
    - **C** \(35 \div 5\)
    - **D** \(30 \div 5\)

13. Which expression would give the best estimate for \(87 \div 9\)?
    - **F** \(54 \div 9\)
    - **G** \(63 \div 9\)
    - **H** \(81 \div 9\)
    - **J** \(90 \div 9\)

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Exploring Division with Remainders

1. Use the counters above to find $4)_{15}$
   a. First, circle as many groups of 4 as you can.
      How many groups of 4 are there? _________
   b. Count how many counters are left over.
      What is the remainder? _________
   c. $4)_{15} = \square \text{ R } \square$

Find each quotient. Each one will have a remainder. You may use counters to help you.

2. $8)_{33}$
3. $5)_{28}$
4. $7)_{64}$
5. $6)_{26}$
6. $8)_{49}$
7. $3)_{23}$
8. $7)_{55}$
9. $5)_{19}$
10. $4)_{31}$
11. $6)_{31}$
12. $7)_{50}$
13. $8)_{66}$

Name _________________________________________________

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Exploring Division with Remainders

1. Use the counters above to find \( 4 \div 15 \)
   a. First, circle as many groups of 4 as you can.
      How many groups of 4 are there? \( 3 \)
   b. Count how many counters are left over.
      What is the remainder? \( 3 \)
   c. \( 4 \div 15 = 3 \text{ R } 3 \)

Find each quotient. Each one will have a remainder. You may use counters to help you.

2. \( 8 \div 33 \)
3. \( 5 \div 28 \)
4. \( 7 \div 64 \)

5. \( 6 \div 26 \)
6. \( 8 \div 49 \)
7. \( 3 \div 23 \)

8. \( 7 \div 55 \)
9. \( 5 \div 19 \)
10. \( 4 \div 31 \)

11. \( 6 \div 31 \)
12. \( 7 \div 50 \)
13. \( 8 \div 66 \)
**Dividing Two-Digit Numbers with Remainders**

1. 2) 39  
2. 3) 46  
3. 8) 58  
4. 4) 51  

5. 4) 94  
6. 7) 61  
7. 6) 77  
8. 3) 38  

9. \(73 \div 4\) = ________  
10. \(98 \div 5\) = ________  

11. \(63 \div 5\) = ________  
12. \(85 \div 3\) = ________  

13. \(52 \div 3\) = ________  
14. \(76 \div 6\) = ________  

15. **Math Reasoning** Tom made 61 sandwiches for the party. A tray holds 8 sandwiches. How many trays of sandwiches did he have? How many sandwiches were left over?  

16. **Test Prep** Circle the correct letter for each answer.  

   Judy has 35 dolls. She wants to put an equal number on each of 3 shelves. How many will fit on each shelf? How many will be left over?  

   A  11 on each shelf; 2 left over  
   B  12 on each shelf; 0 left over  
   C  12 on each shelf; 1 left over  
   D  13 on each shelf; 3 left over  

17. If you divide a number by 7, which number could the remainder **NOT** be?  

   F  2  
   G  5  
   H  6  
   J  8  

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Dividing Two-Digit Numbers with Remainders

1. 2\(\overline{)39}\) 19 R1
2. 3\(\overline{)46}\) 15 R1
3. 8\(\overline{)58}\) 7 R2
4. 4\(\overline{)51}\) 12 R3

5. 4\(\overline{)94}\) 23 R2
6. 7\(\overline{)61}\) 8 R5
7. 6\(\overline{)77}\) 12 R5
8. 3\(\overline{)38}\) 12 R2

9. 73 \(\div\) 4 18 R1
10. 98 \(\div\) 5 19 R3
11. 63 \(\div\) 5 12 R3
12. 85 \(\div\) 3 28 R1

13. 52 \(\div\) 3 17 R1
14. 76 \(\div\) 6 12 R4

15. Math Reasoning Tom made 61 sandwiches for the party. A tray holds 8 sandwiches. How many trays of sandwiches did he have? How many sandwiches were left over?

7 trays; 5 sandwiches left over

Test Prep Circle the correct letter for each answer.

16. Judy has 35 dolls. She wants to put an equal number on each of 3 shelves. How many will fit on each shelf? How many will be left over?

A 11 on each shelf; 2 left over  C 12 on each shelf; 1 left over
B 12 on each shelf; 0 left over  D 13 on each shelf; 3 left over

17. If you divide a number by 7, which number could the remainder NOT be?

F 2  G 5  H 6  J 8
Dividing Multidigit Numbers

1. $6 \overline{)832}$
2. $999 \div 5$
3. $3,846 \div 7$
4. $4 \overline{)57,712}$

5. $4,566 \div 4$
6. $8 \overline{)22,619}$
7. $47,016 \div 9$
8. $3 \overline{)89,698}$

Rule: Divide by 4.

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>96</td>
<td></td>
</tr>
<tr>
<td>268</td>
<td></td>
</tr>
<tr>
<td>2,092</td>
<td></td>
</tr>
</tbody>
</table>

Rule: Divide by 7.

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>84</td>
<td></td>
</tr>
<tr>
<td>616</td>
<td></td>
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Rule: Divide by 3.

<table>
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<tr>
<th>Input</th>
<th>Output</th>
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</thead>
<tbody>
<tr>
<td>39</td>
<td></td>
</tr>
<tr>
<td>2,784</td>
<td></td>
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</tbody>
</table>

18. Suppose you have 136 bagels. You want to put 6 bagels in each bag. Will you have more or fewer than 20 bags with exactly 6 bagels? Explain.

19. Algebra Solve: $3n = 426$

20. Algebra Solve: $5x = 22,120$

Test Prep Circle the correct letter for each answer.

21. In the problem $982 \div 5$, which number cannot be the remainder?

   A 3  B 4  C 5  D 6

22. The 5 families in the neighborhood bought new playground equipment for $4,625. How much did each family pay for the equipment?

   F $225  G $500  H $925  J $1,200

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Dividing Multidigit Numbers

1. $6\overline{832}$
   $\underline{138 \text{ R} 4}$

2. $999 \div 5$
   $\underline{199 \text{ R} 4}$

3. $3,846 \div 7$
   $\underline{549 \text{ R} 3}$

4. $4\overline{57,712}$
   $\underline{14,428}$

5. $4,566 \div 4$
   $\underline{1,141 \text{ R} 2}$

6. $8\overline{22,619}$
   $\underline{2,827 \text{ R} 3}$

7. $47,016 \div 9$
   $5,224$

8. $3\overline{89,698}$
   $\underline{29,899 \text{ R} 1}$

**Rule: Divide by 4.**

<table>
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<tr>
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<tbody>
<tr>
<td>96</td>
<td>24</td>
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<tr>
<td>268</td>
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<tr>
<td>2,092</td>
<td>523</td>
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**Rule: Divide by 7.**

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<th>Output</th>
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<tr>
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<tr>
<td>616</td>
<td>88</td>
</tr>
<tr>
<td>3,157</td>
<td>451</td>
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**Rule: Divide by 3.**

<table>
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<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>13</td>
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<tr>
<td>2,784</td>
<td>928</td>
</tr>
<tr>
<td>13,569</td>
<td>4,523</td>
</tr>
</tbody>
</table>

18. Suppose you have 136 bagels. You want to put 6 bagels in each bag. Will you have more or fewer than 20 bags with exactly 6 bagels? Explain.

$$136 \div 6 = 22 \text{ R} 4 \text{ The quotient is greater than 20.}$$

You will have more than 20 bags.

19. **Algebra** Solve: $3n = 426$

   $$n = 142$$

20. **Algebra** Solve: $5x = 22,120$

   $$x = 4,424$$

**Test Prep** Circle the correct letter for each answer.

21. In the problem $982 \div 5$, which number cannot be the remainder?

   A 3  B 4  C 5  D 6

22. The 5 families in the neighborhood bought new playground equipment for $4,625. How much did each family pay for the equipment?

   F $225  G $500  H $925  J $1,200

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2- or 3-Digit Quotients
Divide. Check your answer.

1. $4 \div 168$
2. $5 \div 370$
3. $8 \div 296$
4. $4 \div 421$

5. $2 \div 227$
6. $8 \div 475$
7. $9 \div 445$
8. $7 \div 651$

9. $6 \div 844$
10. $4 \div 825$
11. $9 \div 703$
12. $5 \div 985$

13. $631 \div 2 = \phantom{0000}$
14. $713 \div 3 = \phantom{0000}$

15. Find the quotient for 515 divided by 8. \phantom{0000}
16. Find the quotient for 744 divided by 6. \phantom{0000}
17. Explain how you know where to start dividing to find the quotient for 63 divided by 7.

________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________

© Pearson Education
# 2- or 3-Digit Quotients

Divide. Check your answer.

<p>| | | | | |</p>
<table>
<thead>
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<td><strong>2</strong></td>
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<td><strong>74</strong></td>
<td><strong>37</strong></td>
<td><strong>105</strong></td>
</tr>
<tr>
<td><strong>1</strong></td>
<td><strong>4)168</strong></td>
<td><strong>5)370</strong></td>
<td><strong>8)296</strong></td>
<td><strong>4)421</strong></td>
</tr>
<tr>
<td><strong>5</strong></td>
<td><strong>113</strong></td>
<td><strong>59</strong></td>
<td><strong>49</strong></td>
<td><strong>93</strong></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>2)227</strong></td>
<td><strong>8)475</strong></td>
<td><strong>9)445</strong></td>
<td><strong>7)651</strong></td>
</tr>
<tr>
<td><strong>9</strong></td>
<td><strong>140</strong></td>
<td><strong>206</strong></td>
<td><strong>78</strong></td>
<td><strong>197</strong></td>
</tr>
<tr>
<td><strong>6</strong></td>
<td><strong>6)844</strong></td>
<td><strong>4)825</strong></td>
<td><strong>9)703</strong></td>
<td><strong>5)985</strong></td>
</tr>
</tbody>
</table>

| **13** | **631 ÷ 2 =** | **315** | **14** | **713 ÷ 3 =** | **237** |
| **15** | **Find the quotient for 515 divided by 8.** | **64** | **16** | **Find the quotient for 744 divided by 6.** | **124** |
| **17** | **Explain how you know where to start dividing to find the quotient for 630 divided by 7.** | **Answers will vary. Possible answer: Compare 7 to the digit in the hundreds place. Since 7 > 6, the quotient starts in the tens place.** | **© Pearson Education** |
Zeros in the Quotient

1. \(6 \div 636\)  
2. \(800 \div 5\)  
3. \(4,255 \div 7\)  
4. \(6 \div 4,250\)

5. \(5,630 \div 4\)  
6. \(8,910 \div 9\)  
7. \(3 \div 28,711\)  
8. \(25,636 \div 8\)

9. Five medium-sized strawberries have about 1,000 seeds. About how many seeds does each strawberry contain?

10. Mary Beth has 215 stickers. She wants to fill 2 albums with the same number of stickers in each. How many stickers will be in each album? How many will be left over?

11. Math Reasoning Joan divided 483 by 6 and got 8 R3. Use estimation to explain why this quotient must be wrong. Then do the division and explain the mistake Joan made.

Test Prep Circle the correct letter for each answer.

12. The shipping department has 5,648 compact disks to put into boxes. If each box holds 8 disks, how many boxes are needed?
   A 70 boxes    B 706 boxes    C 718 boxes    D 7,060 boxes

13. Deirdre decorates cakes 5 days a week. If she decorates 200 cakes in one week and decorates the same number each day, how many cakes does she decorate each day?
   F 4 cakes    H 52 cakes
   G 40 cakes    J 80 cakes
# Zeros in the Quotient

1. \( \frac{636}{6} \) \( \underline{106} \)

2. \( 800 \div 5 \) \( \underline{160} \)

3. \( 4,255 \div 7 \) \( 607 \) R\( \underline{6} \)

4. \( \frac{4,250}{6} \) \( \underline{708} \) R\( \underline{2} \)

5. \( 5,630 \div 4 \) \( \underline{1,407} \) R\( \underline{2} \)

6. \( 8,910 \div 9 \) \( 990 \)

7. \( \frac{28,711}{3} \) \( \underline{9,570} \) R\( \underline{1} \)

8. \( 25,636 \div 8 \) \( \underline{3,204} \) R\( \underline{4} \)

9. Five medium-sized strawberries have about 1,000 seeds. About how many seeds does each strawberry contain? 

**About 200 seeds**

10. Mary Beth has 215 stickers. She wants to fill 2 albums with the same number of stickers in each. How many stickers will be in each album? How many will be left over? 

107 stickers; 1 sticker left over

11. **Math Reasoning** Joan divided 483 by 6 and got 8 R3. Use estimation to explain why this quotient must be wrong. Then do the division and explain the mistake Joan made.

**Estimation: 480 \div 6 = 80; division: 483 \div 6 = 80 \text{ R3}; she omitted the zero in the quotient.**

**Test Prep** Circle the correct letter for each answer.

12. The shipping department has 5,648 compact disks to put into boxes. If each box holds 8 disks, how many boxes are needed?

- **A** 70 boxes
- **B** 706 boxes
- **C** 718 boxes
- **D** 7,060 boxes

13. Deirdre decorates cakes 5 days a week. If she decorates 200 cakes in one week and decorates the same number each day, how many cakes does she decorate each day?

- **F** 4 cakes
- **G** 40 cakes
- **H** 52 cakes
- **J** 80 cakes

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Exploring Division with Money
Complete. Find each quotient. Use play money to help.

1. $8.55 ÷ 5
   $8.55
   - 5
   $3.5
   - 3.5
   0

2. $4.28 ÷ 4
   $4.28
   - 4
   $0.28
   - 0

3. $8.10 ÷ 5
   $8.10
   - 5
   $3.10
   - 3.0

4. $5.61 ÷ 3
   $5.61
   - 3
   $2.61
   - 2.4

5. $1.54 ÷ 2
   $1.54
   - 1.4
   $0.14
   - 0

6. $9.09 ÷ 3
   $9.09
   - 9
   $0.09
   - 0

7. $4.70 ÷ 5
   $4.70
   - 5
   $0.70
   - 0

8. $6.12 ÷ 3
   $6.12
   - 6
   $0.12
   - 0

9. $8.56 ÷ 2
   $8.56
   - 0

10. $4.85 ÷ 4
    $4.85
    - 4
    $0.85
    - 0

11. $8.48 ÷ 4
    $8.48
    - 4
    $4.48
    - 4

12. $8.32 ÷ 3
    $8.32
    - 3
    $3.32
    - 3.2
Exploring Division with Money
Complete. Find each quotient. Use play money to help.

1. \( \frac{1.71}{5} \) $8.55
   - 5
   \[ \begin{align*}
   & \underline{35} \\
   & \underline{35} \\
   & \underline{5} \\
   & \underline{05} \\
   & \underline{0}
   \end{align*} \]

2. \( \frac{1.07}{4} \) $4.28
   - 4
   \[ \begin{align*}
   & \underline{02} \\
   & \underline{0} \\
   \end{align*} \]

3. \( \frac{1.62}{5} \) $8.10
   - 5
   \[ \begin{align*}
   & \underline{31} \\
   & \underline{30} \\
   & \underline{10} \\
   & \underline{10} \\
   & \underline{0}
   \end{align*} \]

4. \( \frac{1.87}{3} \) $5.61
   - 3
   \[ \begin{align*}
   & \underline{26} \\
   & \underline{24} \\
   & \underline{21} \\
   & \underline{21} \\
   & \underline{0}
   \end{align*} \]

5. \( \frac{0.77}{2} \) $1.54
   - 14
   \[ \begin{align*}
   & \underline{14} \\
   & \underline{14} \\
   & \underline{0}
   \end{align*} \]

6. \( \frac{3.03}{3} \) $9.09
   - 9
   \[ \begin{align*}
   & \underline{09} \\
   & \underline{9} \\
   & \underline{0}
   \end{align*} \]

7. \( \frac{0.94}{4} \) $4.70
   - 45
   \[ \begin{align*}
   & \underline{20} \\
   & \underline{20} \\
   & \underline{0}
   \end{align*} \]

8. \( \frac{2.04}{3} \) $6.12
   - 6
   \[ \begin{align*}
   & \underline{12} \\
   & \underline{12} \\
   & \underline{0}
   \end{align*} \]

9. \( \frac{4.28}{2} \) $8.56
   - 8
   \[ \begin{align*}
   & \underline{5} \\
   & \underline{4} \\
   & \underline{16} \\
   & \underline{16} \\
   & \underline{0}
   \end{align*} \]

10. \( \frac{0.97}{5} \) $4.85
    - 45
    \[ \begin{align*}
    & \underline{35} \\
    & \underline{35} \\
    & \underline{0}
    \end{align*} \]

11. \( \frac{2.12}{4} \) $8.48
    - 8
    \[ \begin{align*}
    & \underline{4} \\
    & \underline{4} \\
    & \underline{8} \\
    & \underline{8} \\
    & \underline{0}
    \end{align*} \]

12. \( \frac{1.04}{8} \) $8.32
    - 8
    \[ \begin{align*}
    & \underline{03} \\
    & \underline{0} \\
    & \underline{32} \\
    & \underline{32} \\
    & \underline{0}
    \end{align*} \]
### Dividing Money Amounts

Divide and check.

1. \( \frac{2}{6.82} \)
2. \( \frac{5}{8.95} \)
3. \( \frac{4}{9.24} \)
4. \( \frac{8}{0.64} \)

5. \( \frac{7}{4.41} \)
6. \( \frac{3}{6.45} \)
7. \( \frac{6}{6.90} \)
8. \( \frac{5}{3.65} \)

9. \( \frac{2}{4.64} \)
10. \( \frac{9}{7.11} \)
11. \( \frac{4}{6.16} \)
12. \( \frac{7}{9.38} \)

13. \( \frac{4}{6.52} \)
14. \( \frac{3}{9.93} \)
15. \( \frac{6}{3.78} \)
16. \( \frac{2}{1.54} \)

17. Find the quotient of \( 7.50 \) divided by 5. _________
18. Find the quotient of \( 1.64 \) divided by 2. _________
19. Find the quotient of \( 9.42 \) divided by 3. _________
20. How is \( 1.77 \div 3 \) similar to \( 177 \div 3 \)?

---

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## Dividing Money Amounts

Divide and check.

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<td>$0.64</td>
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<td>7. 6$</td>
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<td>$1.54</td>
<td>$1.34</td>
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<tr>
<td>9. 2$</td>
<td>10. 9$</td>
<td>11. 4$</td>
<td>12. 7$</td>
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<tr>
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<td>$7.11</td>
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<td>$9.38</td>
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<tbody>
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<td>$1.63</td>
<td>$3.31</td>
<td>$0.63</td>
<td>$0.77</td>
<td></td>
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<tr>
<td>13. 4$</td>
<td>14. 3$</td>
<td>15. 6$</td>
<td>16. 2$</td>
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<td>$6.52</td>
<td>$9.93</td>
<td>$3.78</td>
<td>$1.54</td>
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</table>

17. Find the quotient of $7.50 divided by 5. ___$1.50___
18. Find the quotient of $1.64 divided by 2. ___$0.82___
19. Find the quotient of $9.42 divided by 3. ___$3.14___
20. How is $1.77 ÷ 3 similar to 177 ÷ 3?

Possible answer: You divide the same way, but you need to show the decimal point, dollar and cents in the first problem.
Finding Averages

Find the average, or mean, of each group of numbers.

1. 3, 9, 3, 3, 2
2. 10, 14, 19, 9
3. 226, 148, 319

4. 18, 30, 24
5. 26, 27, 20, 19, 23
6. 159, 252, 287, 46

The table at the right shows the number of books each student read each month for 5 months.

7. Which student read the greatest average number of books?

8. Which two students read the same average number of books?

9. Math Reasoning One student ate 4 doughnuts, one ate 9, and one ate 11. Explain why the average number of doughnuts eaten is not an actual number of doughnuts eaten.

Test Prep Circle the correct letter for each answer.

10. Which two sets of numbers have the same average?
   A 4, 8, 10, 2 and 6, 5, 6, 10  
   B 13, 16, 9, 14 and 10, 12, 14, 8  
   C 10, 17, 3 and 12, 14, 4  
   D 5, 14, 11 and 6, 1, 13

11. School T-shirts come in four different patterns. The costs for each pattern are $6.00, $8.00, $10.00, and $12.00. What is the average cost of a school T-shirt?
   F $8.00  
   G $9.00  
   H $10.00  
   J $11.00

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Finding Averages

Find the average, or mean, of each group of numbers.

1. 3, 9, 3, 3, 2
   
   $\frac{3+9+3+3+2}{5} = 4$

2. 10, 14, 19, 9
   
   $\frac{10+14+19+9}{4} = 13$

3. 226, 148, 319
   
   $\frac{226+148+319}{3} = 231$

4. 18, 30, 24
   
   $\frac{18+30+24}{3} = 24$

5. 26, 27, 20, 19, 23
   
   $\frac{26+27+20+19+23}{5} = 23$

6. 159, 252, 287, 46
   
   $\frac{159+252+287+46}{4} = 186$

The table at the right shows the number of books each student read each month for 5 months.

7. Which student read the greatest average number of books?
   Suzanne; 17 books

8. Which two students read the same average number of books?
   Gina and Ricky; 12 books

9. Math Reasoning One student ate 4 doughnuts, one ate 9, and one ate 11. Explain why the average number of doughnuts eaten is not an actual number of doughnuts eaten.
   The average gives you a rough idea, not an exact number.

Test Prep Circle the correct letter for each answer.

10. Which two sets of numbers have the same average?

    A 4, 8, 10, 2 and 6, 5, 6, 10
    C 10, 17, 3 and 12, 14, 4

    B 13, 16, 9, 14 and 10, 12, 14, 8
    D 5, 14, 11 and 6, 1, 13

11. School T-shirts come in four different patterns. The costs for each pattern are $6.00, $8.00, $10.00, and $12.00. What is the average cost of a school T-shirt?

    F $8.00
    G $9.00
    H $10.00
    J $11.00
Exploring Divisibility
You can use rules to find out if numbers are divisible by 3, 6, or 9.

1. A number is divisible by 6 if it is divisible by both _____ and _____.
2. A number is divisible by 9 if the sum of its digits is divisible by _____.
3. A number is divisible by 3 if the sum of its digits is divisible by _____.
4. Find out if 261 is divisible by 3, 6, or 9.
   a. Is 261 divisible by 3? How do you know?
   b. Is 261 divisible by 6? How do you know?
   c. Is 261 divisible by 9? How do you know?

5. Write a 3-digit number that is divisible by 2, 3, and 6.

Complete. Test each number to see if it is divisible by 2, 3, 5, 6, 9, or 10. If it is, write the quotient.

<table>
<thead>
<tr>
<th></th>
<th>40</th>
<th>63</th>
<th>600</th>
<th>324</th>
<th>114</th>
</tr>
</thead>
<tbody>
<tr>
<td>By 2?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>By 3?</td>
<td></td>
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<tr>
<td>By 5?</td>
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<tr>
<td>By 6?</td>
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<tr>
<td>By 9?</td>
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</tr>
<tr>
<td>By 10?</td>
<td></td>
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</tbody>
</table>
**Exploring Divisibility**
You can use rules to find out if numbers are divisible by 3, 6, or 9.

1. A number is divisible by 6 if it is divisible by both ___ and ___.
2. A number is divisible by 9 if the sum of its digits is divisible by ___.
3. A number is divisible by 3 if the sum of its digits is divisible by ___.
4. Find out if 261 is divisible by 3, 6, or 9.
   a. Is 261 divisible by 3? How do you know?
      
      Yes, because $2 + 6 + 1 = 9$, and 9 is divisible by 3.
   b. Is 261 divisible by 6? How do you know?
      
      No. Even though it is divisible by 3, it is not an even number and is not divisible by 2.
   c. Is 261 divisible by 9? How do you know?
      
      Yes, because $2 + 6 + 1 = 9$, and 9 is divisible by 9.

5. Write a 3-digit number that is divisible by 2, 3, and 6.
   
   Possible answer: 342

Complete. Test each number to see if it is divisible by 2, 3, 5, 6, 9, or 10. If it is, write the quotient.

<table>
<thead>
<tr>
<th></th>
<th>40</th>
<th>63</th>
<th>600</th>
<th>324</th>
<th>114</th>
</tr>
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<tbody>
<tr>
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