Grade 3: Step Up to Grade 4
Teacher’s Guide

- Teacher Notes and Answers for Step-Up Lessons
- Practice
- Answers for Practice
- Test
- Answers for Test

Scott Foresman
is an imprint of

Pearson

pearsonschool.com
Step Up to Grade 4

- Rounding Numbers Through Thousands
- Comparing and Ordering Numbers Through Thousands
- Place Value Through Millions
- Rounding Numbers Through Millions
- Patterns and Equations
- Estimating Sums
- Dividing with Objects
- Factoring Numbers
- Mental Math: Multiplying by Multiples of 10
- Estimating Products
- Equal Parts of a Whole
- Parts of a Region
- Parts of a Set
- Equivalent Fractions
- Mixed Numbers
- Congruent Figures and Motions
- Solids and Nets
- Views of Solid Figures
- Congruent Figures
- More Perimeter
Rounding Numbers Through Thousands

Ongoing Assessment

Ask: What does 99,249 round to when rounded to the nearest hundred thousand? 100,000

Error Intervention

If students have trouble remembering place value, then have the students make a table across the top of their page that looks like the following:

<table>
<thead>
<tr>
<th>Hundred Thousands</th>
<th>Ten Thousands</th>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
</table>

If You Have More Time

Have students list all the four-digit numbers that stay the same when rounded to the nearest thousand (the multiples of 1,000), the five-digit numbers that stay the same when rounded to the nearest ten thousand (the multiples of 10,000), and the six-digit numbers that stay the same when rounded to the nearest hundred thousand (the multiples of 100,000).
Comparing and Ordering Numbers Through Thousands

In a recent county election, Henderson received 168,356 votes. Juarez received 168,297 votes. Determine who received more votes by answering 1 to 7.

1. Write 168,356 and 168,297 in the place-value chart.

<table>
<thead>
<tr>
<th>hundred thousands</th>
<th>ten thousands</th>
<th>thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>8</td>
<td>2</td>
<td>9</td>
<td>7</td>
</tr>
</tbody>
</table>

For Exercises 2–5, write <, >, or =.

2. Start with the left column in the chart. 100,000 100,000

3. Since the hundred thousands are equal, compare the ten thousands. 60,000 60,000

4. Since the ten thousands are equal, compare the thousands. 8,000 8,000

5. Since the thousands are equal, compare the hundreds. 300 > 200


168,356 > 168,297

7. So, which candidate received more votes? Henderson

Order 346,217, 319,304, and 348,862 from least to greatest by answering 8 to 12.

8. Write 346,217, 319,304, and 348,862 in the place-value chart on the next page.

<table>
<thead>
<tr>
<th>hundred thousands</th>
<th>ten thousands</th>
<th>thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>9</td>
<td>3</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>8</td>
<td>8</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

9. Start on the left. Write <, >, or =. 300,000 = 300,000

10. Since the hundred thousands are all equal, compare the ten thousands. Since 10,000 < 40,000, what is the least number? 319,304

11. Since 6,000 < 8,000, compare the thousands place of the other two numbers 346,217 < 348,862

12. The numbers in order from least to greatest are: 319,304 346,217 348,862

Use < or > to compare each pair of numbers.

13. 8,112 < 8,221

14. 418,412 < 481,930

15. 321,159 > 312,147

16. 20,657 < 21,687

17. 118,111 < 118,147

18. 914,146 > 904,168

Order the numbers from least to greatest.

19. 8,200; 820; 7,980

20. 12,984; 12,875; 11,987

21. 12,945; 2,309

22. 321,984; 345,879; 323,490

23. Reasoning: When comparing 17,834 and 17,934, can you start by comparing hundreds? Explain.

No; Always compare the left-most digit first.
### Place Value Through Millions

#### Teacher Notes

**Ongoing Assessment**

Ask: *How does the number of zeros in the place value chart change as you move each place to the left?* One zero is added to each place as you move left away from the ones.

**Error Intervention**

If students are having trouble remembering the number of zeros each value has, *then* encourage students to write #00,000,000 above the heading hundred millions, #0,000,000 above the heading ten millions, #,000,000 above the heading millions, and so on. That way they know to place the number (#) and then the appropriate number of zeros.

**If You Have More Time**

Have students look up the population of the United States and write the number in standard form, expanded form, and word form.

---

### Place Value Through Millions

#### 1.

Write 462,397,158 in the place-value chart below.

<table>
<thead>
<tr>
<th>Millions</th>
<th>Thousands</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>8</td>
</tr>
</tbody>
</table>

#### 2.

Complete the table to find the value of each digit in 462,397,158.

<table>
<thead>
<tr>
<th>Digit</th>
<th>Place Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>hundred millions</td>
</tr>
<tr>
<td>6</td>
<td>ten millions</td>
</tr>
<tr>
<td>3</td>
<td>millions</td>
</tr>
<tr>
<td>9</td>
<td>hundred thousands</td>
</tr>
<tr>
<td>7</td>
<td>thousands</td>
</tr>
<tr>
<td>1</td>
<td>hundreds</td>
</tr>
<tr>
<td>5</td>
<td>tens</td>
</tr>
<tr>
<td>8</td>
<td>ones</td>
</tr>
</tbody>
</table>

#### 3.

Use the table above to help you write 462,397,158 in expanded form.

\[400,000,000 + 60,000,000 + 2,000,000 + 300,000 + 90,000 + 7,000 + 100 + 50 + 8 \]

#### 4.

Write the short word form of 462,397,158.

Four hundred sixty-two million, three hundred ninety-seven thousand, one hundred fifty-eight

#### 5.

Write 462,397,158 in word form.

Four hundred sixty-two million, three hundred ninety-seven thousand, one hundred fifty-eight

---

### Place Value Through Millions (continued)

Write the value of the underlined digit.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

Write each number in word form and in short word form.

12. 2,160,500
Two million, one hundred sixty thousand, five hundred; 2 million, 160 thousand, 5 hundred

13. 91,207,040
Ninety-one million, two hundred seventy thousand, forty; 91 million, 207 thousand, 40

14. 510,200,450
Five hundred ten million, two hundred thousand, four hundred fifty; 510 million, 200 thousand, 4 hundred, 50

15. An underground rail system in Osaka, Japan carries 988,600,000 passengers per year. Write this number in expanded form.

\[900,000,000 + 80,000,000 + 8,000,000 + 600,000 \]

16. Reasoning
What number would make the number sentence below true?

\[3,589,000 + 3,000,000 + 80,000 + 9,000 = 500,000 \]

17. Reasoning
What number can be added to 999,990 to make 1,000,000?

10
Rounding Numbers Through Millions

Round 4,307,891 to the nearest million by answering 1 to 5.

1. What digit is in the millions place? 4
2. What digit is to the right of the 4? 3
3. Is the digit to the right of 4 less than 5, or is it 5 or greater? less than 5

If the digit to the right of the number is 5 or more, the number rounds up. If the digit is less than 5, the number rounds down.

4. Do you need to round up or down? Down
5. Keep the 4 and change the other digits to 0s. What is 4,307,891 rounded to the nearest million? 4,000,000

Round 6,570,928 to the nearest hundred thousand by answering 6 to 11.

6. Which digit is in the hundred thousands place? 5
7. What digit is to the right of the 5? 7
8. Is the digit to the right of 5 less than 5, or is it 5 or greater? 5 or greater
9. Do you need to round up or down? Up
10. Change the 5 to the next highest digit and change the other digits to 0s. What is 6,570,928 rounded to the nearest hundred thousand? 6,600,000
11. What is 6,570,928 rounded to the nearest thousand? 6,571,000

Name

Rounding Numbers Through Millions (continued)

Round 1,581,267 to each place.

12. ten 1,581,270 13. hundred 1,581,300
14. thousand 1,581,000 15. ten thousand 1,580,000
16. hundred thousand 1,600,000 17. million 2,000,000

Round each number to the nearest ten.

18. 3,194,764 3,194,760 19. 8,967,001 8,967,000

Round each number to the nearest hundred.

20. 1,265,906 1,265,900 21. 6,906,294 6,906,300

Round each number to the nearest thousand.

22. 8,070,126 8,070,000 23. 9,264,431 9,264,000

Round each number to the nearest ten thousand.

24. 7,514,637 7,510,000 25. 2,437,894 2,440,000

Round each number to the nearest hundred thousand.

26. 1,395,384 1,400,000 27. 3,992,460 4,000,000

Round each number to the nearest million.

28. 4,578,952 5,000,000 29. 5,022,121 5,000,000
30. 2,439,019 2,000,000 31. 8,888,888 9,000,000
32. Reasoning A number rounded to the nearest million is 4,000,000. One less than the same number rounds to 3,000,000 when rounded to the nearest million. What is the number? 3,500,000

Name

Rounding Numbers Through Millions (continued)

Round 5,830,957 to the nearest ten, hundred, thousand, ten thousand, hundred thousand, and million. Repeat with 9,999,999.

Ongoing Assessment

Ask: What is the smallest number that will round to 1,000,000 when rounded to the nearest million? 950,000

Error Intervention

If students are having trouble identifying the place values for rounding, then have the students make a place value chart across the top of their page.

If students do not know the place values, then use F10: Place Value Through Millions.

If You Have More Time

Have students round 5,830,957 to the nearest ten, hundred, thousand, ten thousand, hundred thousand, and million. Repeat with 9,999,999.
Patterns and Equations

1. Complete the table at the right.
2. What expression describes the cost with delivery for a food order costing \( c \) dollars? \( c + 2 \)
3. Set \( d \) equal to the expression to get an equation representing the relationship between the cost of the food order \( c \) and the cost with delivery \( d \).

\[ d = c + 2 \]

4. Use the equation to find \( d \) when \( c = 14.52 \).

\[ d = 16.52 \]

5. Complete the table at the right.
6. Write an equation representing the relationship between the number of pretzels \( p \) and the total cost \( c \).

\[ c = 5.5p \]

7. Use the equation to find \( c \) when \( p = 4 \).

\[ c = 22 \]

8. A field goal in football is worth 3 points. Complete the table below to show the relationship between the number of field goals \( f \) and the number of points \( p \).

Sample answers are shown in the table.

<table>
<thead>
<tr>
<th>Field Goals ( f )</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points ( p )</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>18</td>
</tr>
</tbody>
</table>

9. Write an equation to represent the relationship between the number of field goals \( f \) and points \( p \). \( p = 3f \)

Ongoing Assessment

Ask: If a rule for a table is \( x + 7 \), what equation represents the relationship between the inputs \( x \) and the outputs \( y \)? \( y = x + 7 \)

Error Intervention

If students have trouble writing an expression for the pattern in the table, then use F26: Expressions with Addition and Subtraction or F27: Expressions with Multiplication and Division.

If You Have More Time

Have students think of a real-world situation which can be represented by an equation, write the equation, and create a table.

Write an equation to represent the relationship between \( x \) and \( y \) in each table. Then use the equation to complete the table.

10. \( y = x + 6 \)

<table>
<thead>
<tr>
<th>( x )</th>
<th>( y )</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>21</td>
<td>27</td>
</tr>
</tbody>
</table>

11. \( y = x + 6 \)

<table>
<thead>
<tr>
<th>( x )</th>
<th>( y )</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>5</td>
<td>24</td>
</tr>
<tr>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>10</td>
<td>27</td>
</tr>
</tbody>
</table>

12. \( y = 8x \)

<table>
<thead>
<tr>
<th>( x )</th>
<th>( y )</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>6</td>
<td>48</td>
</tr>
<tr>
<td>7</td>
<td>56</td>
</tr>
</tbody>
</table>

13. \( y = x - 9 \)

<table>
<thead>
<tr>
<th>( x )</th>
<th>( y )</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>19</td>
</tr>
<tr>
<td>14</td>
<td>25</td>
</tr>
<tr>
<td>15</td>
<td>32</td>
</tr>
<tr>
<td>25</td>
<td>50</td>
</tr>
</tbody>
</table>

14. \( y = 2.4x \)

<table>
<thead>
<tr>
<th>( x )</th>
<th>( y )</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>4.8</td>
</tr>
<tr>
<td>6</td>
<td>14.4</td>
</tr>
<tr>
<td>7</td>
<td>17.6</td>
</tr>
</tbody>
</table>

15. \( y = x + 5 \)

<table>
<thead>
<tr>
<th>( x )</th>
<th>( y )</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>50</td>
<td>55</td>
</tr>
<tr>
<td>35</td>
<td>40</td>
</tr>
<tr>
<td>25</td>
<td>30</td>
</tr>
</tbody>
</table>

16. \( y = x + 7.8 \)

<table>
<thead>
<tr>
<th>( x )</th>
<th>( y )</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>9.8</td>
</tr>
<tr>
<td>2.5</td>
<td>10.3</td>
</tr>
<tr>
<td>3.2</td>
<td>11.1</td>
</tr>
<tr>
<td>3.8</td>
<td>11.6</td>
</tr>
</tbody>
</table>

17. Reasoning: If a rule is \( c = p + 5 \), what is \( c \) when \( p = 20 \)?

\[ c = 25 \]
Estimating Sums

When Joseph added 43 and 28, he got a sum of 71. To check that this answer is reasonable, use estimation.

1. Round each addend to the nearest ten.
   - 43 rounded to the nearest ten is 40
   - 28 rounded to the nearest ten is 30

2. Add the rounded numbers.
   - $40 + 30 = 70$
   - Since 71 is close to 70, the answer is reasonable.

When Ling added 187 and 242, she got a sum of 429. To check that this answer is reasonable, use estimation.

3. Round each addend to the nearest hundred.
   - 187 rounded to the nearest hundred is 200
   - 242 rounded to the nearest hundred is 200

4. Add the rounded numbers.
   - $200 + 200 = 400$
   - Since 429 is close to 400, the answer is reasonable.

Estimate by rounding to the nearest ten.

5. 71 + 36 = 107
6. 24 + 81 = 105
7. 43 + 91 = 134
8. 54 + 66 = 120
9. 68 + 27 = 95
10. 19 + 93 = 112
11. 89 + 75 = 164
12. 54 + 33 = 87

Estimate by rounding to the nearest hundred.

13. 367 + 190 = 557
14. 791 + 170 = 961
15. 506 + 80 = 586
16. 458 + 70 = 528
17. 940 + 190 = 1130
18. 675 + 460 = 1135
19. 531 + 776 = 1307
20. 369 + 481 = 850
21. 151 + 260 = 411
22. 705 + 936 = 1641
23. Reasoning: Jaimee was a member of the school chorus for 3 years. Todd was a member of the school band for 2 years. The chorus has 43 members and the band has 85 members. About how many members do the two groups have together? 
   - 130
24. Luis sold 328 sport bottles and Jorge sold 411. About how many total sport bottles did the two boys sell? 
   - 700
25. Reasoning: What is the largest number that can be added to 46 so that the sum is 70 when both numbers are rounded to the nearest ten? Explain.
   - 24: Since 46 rounds to 50, and 20 + 50 = 70, you need the largest number that rounds to 20, which is 24.
Dividing with Objects

Materials: 7 counters and 3 half sheets of paper for each student or pair.

Andrew has 7 model cars to put on 3 shelves. He wants to put the same number of cars on each shelf. How many cars should Andrew put on each shelf? Answer 1 to 8.

Find: $7 \div 3$.

1. Show 7 counters and 3 sheets of paper.

2. Put 1 counter on each piece of paper.

3. Are there enough counters to put another counter on each sheet of paper? Yes

4. Put another counter on each piece of paper.

5. Are there enough counters to put another counter on each sheet of paper? No

6. How many counters are on each sheet? 2

7. How many counters are remaining, or left over? 1

So, $7 \div 3 = 2 \text{ R}1$, or $7 = 2 \times 3 + 1$. Andrew can put 2 cars on each shelf with 1 car left over.

If You Have More Time

Have partners find all the division sentences that can be written if 8 is the dividend and the divisor is 1 to 8.

Teacher Notes

Ongoing Assessment

Ask: Why should the remainder always be less than the divisor? For example, when dividing 10 by 3, why can you not have a remainder of 4? If the remainder is equal to or greater than the divisor, then the quotient should be larger. For example, when dividing 10 counters into 3 equal groups, if 4 are left, there are enough to put another counter into each group.

Error Intervention

If students have trouble completing problems using counters or drawings, then encourage them to use repeated subtraction to solve the problem. Continue to subtract until it can no longer be done. What is left is the remainder.

Intervention Lesson G42 161
Factoring Numbers

Materials

The arrays below show all of the factors of 12.

1 × 12

2 × 6

3 × 4

The order factors are listed may vary.

1. What are all the factors of 12?

1, 2, 3, 4, 6, 12

2. Create all the possible arrays you can with 17 color tiles.

3. What are the factors of 17?

1, 17

Numbers which have only 2 possible arrays and exactly 2 factors are prime numbers.

4. Is 17 a prime number? yes

5. Is 12 a prime number? no

Numbers which have more than 2 possible arrays and more than 2 factors are composite numbers.

6. Is 17 a composite number? no

7. Is 12 a composite number? yes

The order factors are listed may vary.

8. What are the factors of 24?

1, 2, 3, 4, 6, 8, 12, 24

9. Is 24 a prime number or a composite number? composite

10. 7

11. 8

12. 9

13. 10

14. 11

15. 12

16. 13

17. 14

18. 15

19. 16

20. 17

21. 18

22. Mr. Lee has 18 desks in his room. He would like them arranged in a rectangular array. Draw all the different possible arrays and write a multiplication sentence for each.

See answers on page 59.

23. Reasoning Lee says 53 is a prime number because it is an odd number. Is Lee’s reasoning correct? Give an example to prove your reasoning.

No; 53 is a prime number not because it is an odd number, but because it only has 2 factors: 1 and 53. A counterexample is 15 is an odd number but it is not a prime number because it has more than 2 factors: 1, 3, 5, 15.
Mental Math: Multiplying by Multiples of 10

A publishing company ships a particular book in boxes with 6 books each. How many books are in 20 boxes? How many in 2,000 boxes?

Find 20 \times 6 and 2,000 \times 6 by filling in the blanks.

1. \(20 \times 6 = 10 \times 2 \times 6\)
   \[\frac{10 \times 2 \times 6}{6} = 120\]
   \[\frac{10 \times 12}{6} = 120\]
   \[\frac{120}{6} = 12,000\]

3. How many books are in 20 boxes? 120 books
4. How many books are in 2,000 boxes? 12,000 books

The same publishing company ships a smaller book in boxes with 40 books each. How many books are in 50 boxes? How many are in 500 boxes?

Find 50 \times 40 and 500 \times 40 by filling in the blanks.

5. \(50 \times 40 = 5 \times 10 \times 2 \times 4 \times 10\)
   \[\frac{5 \times 10 \times 2 \times 4 \times 10}{10} = 2,000\]
   \[\frac{5 \times 10 \times 2 \times 4}{10} = 200\]
   \[\frac{2,000}{10} = 20,000\]

7. How many books are in 50 boxes? 2,000 books
8. How many books are in 500 boxes? 20,000 books

Notice the pattern when multiplying multiples of 10.

9. \(7 \times 60 = 560\)
   \(70 \times 80 = 5,600\)
   \(700 \times 800 = 560,000\)

10. \(4 \times 60 = 240\)
    \(40 \times 60 = 2,400\)
    \(400 \times 600 = 24,000\)

Ongoing Assessment

Ask: **Will the number of zeros in the product always be the same as the sum of the number of zeros in the factors?** No Why not? Sometimes the leading numbers in the factors will multiply to make another zero such as \(4 \times 5 = 20\).

Error Intervention

If students are making mistakes with multiplication facts, then use some of the intervention lessons on basic multiplication facts, G25 to G32.

If You Have More Time

Have students write and solve a word problem that involves multiplying multiples of ten.
Mrs. Wilson's class at Hoover Elementary School is collecting canned goods. Their goal is to collect 600 cans. There are 21 students in the class and each student agrees to bring in 33 cans. Answer 1 to 7 to find if the class will meet their goal.

Estimate \(21 \times 33\) and compare the answer to 600.

Round each factor to get numbers you can multiply mentally.

1. What is 21 rounded to the nearest ten? \(20\)
2. What is 33 rounded to the nearest ten? \(30\)
3. Multiply the rounded numbers. \(20 \times 30 = 600\)

The answer is the same as the number needed to meet the goal.

4. Was 21 rounded up or down? \(\text{down}\)
5. Was 33 rounded up or down? \(\text{down}\)
6. Is \(21 \times 33\) more or less than \(20 \times 30\)? \(\text{more}\)
7. Will the goal be reached? \(\text{yes}\)

Hoover Elementary School had a goal to collect 12,000 canned goods. There are 18 classes and each class collects 590 cans. Answer 8 to 13 to find if the school will meet their goal.

Estimate \(18 \times 590\) and compare the answer with 12,000.

Round each factor to get numbers you can multiply mentally.

8. What is 18 rounded to the nearest ten? \(20\)
9. What is 590 rounded to the nearest hundred? \(600\)
10. Multiply the rounded numbers. \(20 \times 600 = 12,000\)

The answer is the same as the number needed to meet the goal.

11. Was 18 rounded up or down? \(\text{up}\)
12. Was 590 rounded up or down? \(\text{up}\)
13. Is \(18 \times 590\) more or less than \(20 \times 600\)? \(\text{less}\)
14. Will the goal be reached? \(\text{no}\)

Round each factor so that you can estimate the product mentally.

14. \(71 \times 382\) 
   \[70 \times 400\]
   \[28,000\]
15. \(27 \times 62\) 
   \[30 \times 60\]
   \[1,800\]
16. \(45 \times 317\) 
   \[50 \times 300\]
   \[15,000\]
17. \(58 \times 176\) 
   \[60 \times 200\]
   \[12,000\]
18. \(831 \times 42\) 
   \[800 \times 40\]
   \[32,000\]
19. \(16 \times 768\) 
   \[20 \times 800\]
   \[16,000\]
20. \(87 \times 67\) 
   \[90 \times 70\]
   \[6,300\]
21. \(373 \times 95\) 
   \[400 \times 100\]
   \[40,000\]
22. \(57 \times 722\) 
   \[60 \times 700\]
   \[42,000\]
23. Debra spends 42 minutes each day driving to work. About how many minutes does she spend driving to work each month? \(1,200\) minutes

24. Reasoning If \(64 \times 82\) is estimated to be \(60 \times 80\), would the estimate be an overestimate or an underestimate? Explain.

   It would be an underestimate because you are rounding both factors down.
Teacher Notes

Ongoing Assessment
Ask: Looking at the names for shapes divided into 4, 5, 6, 8, 10, and 12 equal parts, what might be the name of a shape divided into seven equal parts? sevenths

Error Intervention
If children have trouble understanding the concept of equal parts, then use A35: Equal parts.

If You Have More Time
Have students fold other rectangular sheets of paper and circular pieces of paper to find and name other equal parts.

Equal Parts of a Whole

Materials: rectangular sheets of paper, 3 for each student; crayons or markers

1. Fold a sheet of paper so the two shorter edges are on top of each other, as shown at the right.
2. Open up the piece of paper. Draw a line down the fold. Color each part a different color.

The table below shows special names for the equal parts. All parts must be equal before you can use these special names.

3. Are the parts you colored equal in size? yes
4. How many equal parts are there? 2
5. What is the name for the parts you colored? halves
6. Fold another sheet of paper like above. Then fold it again so that it makes a long slender rectangle as shown below.
7. Open up the piece of paper. Draw lines down the folds. Color each part a different color.
8. Are the parts you colored equal in size? yes
9. How many equal parts are there? 4
10. What is the name for the parts you colored? fourths
11. Fold another sheet of paper into 3 parts that are not equal. Open it and draw lines down the folds. In the space below, draw your rectangle and color each part a different color.

Check that students draw unequal parts.

Equal Parts of a Whole (continued)

Tell if each shows parts that are equal or parts that are not equal. If the parts are equal, name them.

12. equal fourths
13. not equal
14. equal thirds
15. equal eighths
16. equal twelfths
17. not equal
18. not equal
19. equal fifths
20. equal halves
21. not equal
22. equal sixths
23. not equal

24. Reasoning: If 5 children want to equally share a large pizza and each gets 2 pieces, will they need to cut the pizza into fifths, eighths, or tenths? tenths

86 Intervention Lesson H1
Parts of a Region

Teacher Notes

Ongoing Assessment
Ask: Janet said she ate \( \frac{3}{4} \) of an orange. Explain why Janet could have said she ate the whole orange. Sample answer: The orange would be cut in 4 pieces and she ate 4 pieces, so she ate the whole thing.

Error Intervention
If children have trouble writing fractions for parts of a region, then use A36: Understanding Fractions to Fourths and A38: Writing Fractions for Part of a Region.

If You Have More Time
Have students design a rectangular flag (or rug, placemat, etc.) that is divided into equal parts. Have them color their flag and then on the back write the fractional parts of each color.
Parts of a Set

Name

Parts of a Set

Materials: two-color counters, 20 for each pair; crayons or markers

1. Show 4 red counters and 6 yellow counters.

2. How many counters are there in all? 10

3. How many of the counters are red? 4

4. What fraction of the group of counters is red?

   \[
   \frac{4}{10} \quad \text{number of counters that are red} \\
   10 \quad \text{total number of counters}
   \]

   Four tenths of the group of counters is red.

5. How many of the counters are yellow? 6

6. What fraction of the group of counters are yellow?

   \[
   \frac{6}{10} \quad \text{number of counters that are yellow} \\
   10 \quad \text{total number of counters}
   \]

   Six tenths of the group of counters is yellow.

Answer can vary on 7 and 8. Another correct set of answers is 12 and 10.

7. How many counters do you need in all? 6

8. How many of the counters need to be red? 5

Check that students color 5 circles red.

9. Show the counters and color below to match.

   Write the fraction for the shaded parts of each set.

   10. \( \frac{2}{3} \)

   11. \( \frac{1}{2} \)

   12. \( \frac{3}{4} \)

   13. \( \frac{4}{5} \)

   14. \( \frac{2}{5} \)

   15. \( \frac{4}{6} \)

Draw a set of shapes and shade them to show each fraction.

16. \( \frac{5}{9} \)

    17. \( \frac{6}{10} \)

    Check students’ drawings.

18. Reasoning: If Sally has 5 yellow marbles and 7 blue marbles, what fraction of her marbles are yellow? What fraction of her marbles are blue? Draw a picture to justify your answer.

   \( \frac{5}{12} \): Students should draw 12 marbles with 5 blue.

Teacher Notes

Ongoing Assessment

Ask: What does it mean that \( \frac{3}{12} \) of a group of marbles are green? There are 3 green marbles out of a total of 12 marbles.

Error Intervention

If children have difficulty describing parts of a set, then use A37: Fractions of a Set and A39: Writing Fractions for Part of a Set.

If You Have More Time

Have students look around the classroom and name different fractions they see. For example: \( \frac{6}{18} \) of the students have their math book out; \( \frac{2}{5} \) of the computers are turned off; \( \frac{5}{9} \) of the boys have on shorts.
Equivalent Fractions

Materials: crayons or markers

1. Show \( \frac{5}{8} \) by coloring 2 of the \( \frac{1}{8} \) strips.
2. Color as many \( \frac{1}{2} \) strips as it takes to cover the same region as the \( \frac{2}{3} \).
3. How many \( \frac{1}{2} \) strips did you color?
4. So, \( \frac{2}{3} \) is equivalent to four \( \frac{1}{2} \) strips.
5. You can use multiplication to find a fraction equivalent to \( \frac{2}{3} \). To do this, multiply the numerator and the denominator by the same number.
6. What number is the denominator of \( \frac{2}{3} \) multiplied by to get 6?
7. Since the denominator was multiplied by 2, the numerator must also be multiplied by 2. Put the product of 2 \( \times 2 \) in the numerator of the second fraction above.
8. Where did you color?
9. Color as many \( \frac{1}{8} \) strips as it takes to cover the same region as \( \frac{3}{8} \).
10. How many \( \frac{1}{8} \) strips did you color?

Equivalent Fractions (continued)

10. So, \( \frac{3}{5} \) is equivalent to three \( \frac{1}{5} \) strips.
11. You can use division to find a fraction equivalent to \( \frac{9}{12} \). To do this, divide the numerator and the denominator by the same number.
12. What number is the denominator of \( \frac{9}{12} \) divided by to get 4?
13. Since the denominator was divided by 3, the numerator must also be divided by 3. Put the product of 3 \( \times 3 \) in the numerator of the second fraction above.
14. Divide the numerator and denominator of each fraction by the same number to find a fraction equivalent to each.
15. If the numerator and denominator cannot be divided by anything else, then the fraction is in simplest form.
16. Is \( \frac{5}{12} \) in simplest form?
17. Find each equivalent fraction.
18. Write each fraction in simplest form.
19. Explain why \( \frac{5}{8} \) is not in simplest form.
20. Sample answer: 4 and 6 have a common factor of 2.
Mixed Numbers

Name ____________________

Materials: fraction strips

A mixed number is a number written with a whole number and a fraction. An improper fraction is a fraction in which the numerator is greater than or equal to the denominator.

1. Circle the number that is a mixed number. 3 4 \(\frac{1}{3}\) 5 \(\frac{3}{4}\)
2. Circle the number that is an improper fraction. \(\frac{3}{2}\) 2 \(\frac{3}{2}\) \(\frac{9}{4}\)

Write the improper fraction \(\frac{7}{3}\) as a mixed number by answering 3 to 6.

4. Use fraction strips. How many \(\frac{1}{3}\) strips can you make with

\[\text{seven} \ 1 \ \frac{1}{3} \ \text{strips?}
\]

5. How many \(\frac{1}{3}\) strips do you have left over?

6. Write \(\frac{7}{3}\) as a mixed number

Write \(\frac{5}{3}\) as a mixed number without fraction strips by answering 7 to 9.

7. Divide 7 by 3 at the right.

\[\text{Quotient} \ 2 \text{ Remainder} \ 1 \text{ Divisor} \ 3 \ 7 \]

Notice, the quotient 2 tells how many one strips you can make. The remainder 1 tells how many \(\frac{1}{3}\) strips are left over.

8. Fill in the missing numbers below.

9. Write \(\frac{7}{3}\) as a mixed number

Mixed Numbers (continued)

10. Since \(14 \div 5 = 2 R4\), what is \(\frac{14}{5}\) as a mixed number? \(2 \frac{4}{5}\)

Write \(2 \frac{4}{5}\) as an improper fraction by answering 11 to 13.

11. Show \(2 \frac{4}{5}\) with fractions strips.

12. Use fraction strips. How many \(\frac{1}{5}\) strips does it take to equal \(\frac{11}{5}\)?

Write \(2 \frac{4}{5}\) as an improper fraction without using fraction strips by answering 14 to 16.

13. What improper fraction equals \(2 \frac{4}{5}\)? \(\frac{11}{5}\)

14. Fill in the missing numbers.

\[\text{Whole Number} \div \text{Denominator} = \text{Numerator}
\]

15. Write the 11 you found above over the denominator, 5

16. What improper fraction equals \(\frac{11}{5}\)?

Notice, 2 \(\div 5\) tells how many \(\frac{1}{5}\) strips equal two wholes. The 1 tells how many additional \(\frac{1}{5}\) strips there are.

17. Since \(6 \times 4 + 3 = 27\), what is \(\frac{27}{4}\) as an improper fraction?

Change each improper fraction to a mixed number or a whole number and change each mixed number to an improper fraction.

18. \(\frac{23}{7}\) 19. \(\frac{6}{3}\) 20. \(\frac{3}{2}\) 21. \(\frac{23}{2}\)

If You Have More Time

Have students work in pairs. Have each student write 5 mixed numbers on index cards, one number per card. Then have each student write an improper fraction on an index card to match each mixed number written by the partner. Then the pair can play a memory game. Have the students shuffle the cards and lay them face down in an array. Have one student flip over two cards. If the cards are a match, then that player keeps the cards and can take another turn. If the cards are not a match, then the cards are turned back over and the other student has a chance to find a match. The game continues until all of the matches are found. The player with the most matches wins.

Teacher Notes

Ongoing Assessment

Ask: What is \(\frac{15}{4}\) written as a mixed number? \(3 \frac{3}{4}\)

Error Intervention

If students have difficulty dividing when converting from an improper fraction to a mixed number, then use G42: Dividing with Objects and H15: Fractions and Division.

If students are changing a mixed number to an improper fraction and the students multiply the whole number and the numerator, then, have the students write the word DoWN on their paper to remind them of the correct procedure: \((D \times W) + N\).
Teacher Notes

Ongoing Assessment

Ask: Why are all squares not congruent?
Congruent figures must have the same size and shape. Squares can be different sizes.

Error Intervention

If students have trouble understanding congruency, then use D54: Same Size, Same Shape.

If students have trouble differentiating between slides, flips, and turns, then use D55: Ways to Move Shapes.

If students understand congruency, but have trouble deciding if two figures are congruent, then have students trace one of the figures and place the tracing over the other figure to see if it has the same size and shape.

If You Have More Time

Have students write their name using letters that have been flipped, turned, or slid. Exchange with a partner and have the partner identify what motion was used on each letter. Show the students that some letters can look like a slide and a flip. For example, the letter “I” looks the same when it is flipped and slid to the right.

Materials:
construction paper, markers, and scissors

Follow 1–10.

1. Cut a scalene triangle out of construction paper.

2. Place your cut-out triangle on the bottom left side of another piece of construction paper. Trace the triangle with a marker.

3. Slide your cut-out triangle to the upper right of the same paper and trace the triangle again.

4. Look at the two triangles that you just traced. Are the two triangles the same size and shape?

When a figure is moved up, down, left, or right, the motion is called a slide, or translation.

Figures that are the exact same size and shape are called congruent figures.

5. On a new sheet of paper, draw a straight dashed line as shown at the right. Place your cut-out triangle on the left side of the dashed line. Trace the triangle with a marker.

6. Pick up your triangle and flip it over the dashed line, like you were turning a page in a book. Trace the triangle again.

7. Look at the two triangles that you just traced. Are the two triangles congruent?

When a figure is picked up and flipped over, the motion is called a flip, or reflection.

8. On a new sheet of paper, draw a point in the middle of the paper. Place a vertex of your cut-out triangle on the point. Trace the triangle with a marker.

9. Keep the vertex of your triangle on the point and move the triangle around the point like the hands on a clock. Trace the triangle again.

10. Look at the two triangles you just traced. Are the two triangles congruent?

When a figure is turned around a point, the motion is a turn, or rotation.

Write slide, flip, or turn for each diagram.

11. slide

12. flip

13. turn

14. turn

15. flip

16. slide

For Exercises 17 and 18, use the figures to the right.

17. Are Figures 1 and 2 related by a slide, a flip, or a turn?

18. Are Figures 1 and 3 related by a slide, a flip, or a turn?

19. Reasoning: Are the polygons at the right congruent? If so, what motion could be used to show it?

Yes; one is a turn of the other.
**Teach Notes**

**Ongoing Assessment**

Ask: *What solid best represents a can of corn?*

cylinder

**Error Intervention**

If students have trouble identifying solids, then use I1: Solid Figures.

**If You Have More Time**

In pairs, have students play *Guess My Solid*. One student should select a solid made from the nets; make sure the other student cannot see which solid the partner picks. The second student asks yes-or-no questions such as, *Does it have more than 5 vertices? Does it have at least one square face?* and then tries to guess what the solid is using the clues.

---

**Materials**

- Tape, scissors, copy of nets for all prisms, square and rectangular pyramids from Teaching Tool Masters

Cut out and tape each net to help complete the tables. Each group should make 7 solids.

| Solids and Nets (continued) |

**What solid will each net form?**

6. [Cylinder]

7. [Cube]

8. [Rectangular prism]

9. [Triangular prism]

10. [Cone]

11. [Square pyramid]

12. **Reasoning** Is the figure a net for a cube? Explain.

No; the net only has five faces and a cube has six faces.

---

**Materials**

- Table of faces, edges, vertices, and shapes of faces for solids:
  - Pyramid: 5 faces, 8 edges, 5 vertices; 1 square, 4 triangles
  - Rectangular Pyramid: 5 faces, 8 edges, 5 vertices; 1 rectangle, 4 triangles
  - Cube: 6 faces, 12 edges, 8 vertices; 6 squares
  - Rectangular Prism: 6 faces, 12 edges, 8 vertices; 6 rectangles
  - Triangular Prism: 5 faces, 9 edges, 6 vertices; 2 triangles, 3 rectangles
Views of Solid Figures

**Materials** 6 blocks or small cubes from place-value blocks for each pair or group, crayons or markers

Stack blocks to model the solid shown at the right. Assume that there are only 6 cubes in the solid so that none are hidden.

The top view of the solid is the image seen when looking straight down at the figure.

Draw the top view of the solid at the right by answering 1 and 2.

1. How many cubes can you see when you look straight down at the solid? 3

2. Color in squares on the grid to indicate the blocks seen from the top view.

The front view is the image seen when looking straight at the cubes.

Draw the front view of the solid above by answering 3 and 4.

3. How many cubes can you see when you look straight at the solid? 3

4. Color in squares on the grid to indicate the blocks seen from the front view.

The side view is the image seen when looking at the side of the cubes.

Draw the side view of the solid above by answering 5 and 6.

5. How many cubes can you see when you look at the solid from the side? 3

6. Color in squares on the grid to indicate the blocks seen from the side view.

**Reasoning** If a cube is added to the top of the solid in Exercise 11, what views would change? What view would not change?

The front and side views would change but the top view would not.
Teacher Notes

Ongoing Assessment
Ask: Do figures have to be facing the same way in order to be considered congruent? No, they have to be the same size and the same shape but they can be turned in different directions and still be considered congruent.

Error Intervention
If students have trouble identifying shapes that are the same size, then have students trace one figure and move the tracing over the other figure.

If You Have More Time
Have student work in pairs to find congruent objects in the classroom.

Congruent Figures

Materials: tracing paper and scissors
Two figures that have exactly the same size and shape are congruent.

1. Place a piece of paper over Figure A and trace the shape. Is the figure you drew congruent to Figure A? yes
Cut out the figure you traced and use it to answer 2 to 10.

2. Place the cutout on top of Figure B. Is Figure B the same size as Figure A? no
Is Figure B congruent to Figure A? no

3. Is Figure B congruent to Figure A? no

4. Place the cutout on top of Figure C. Is Figure C the same shape as Figure A? no
Is Figure C congruent to Figure A? no

5. Is Figure C congruent to Figure A? no

6. Place the cutout on top of Figure D. Is Figure D the same size as Figure A? yes
Is Figure D the same shape as Figure A? yes

7. Is Figure D the same shape as Figure A? yes
Is Figure D congruent to Figure A? yes

8. Is Figure D congruent to Figure A? yes

9. Circle the figure that is congruent to the figure at the right.

10. Divide the isosceles triangle shown at the right into 2 congruent right triangles.

11. Divide the hexagon shown at the right into 6 congruent equilateral triangles.

12. Divide the rectangle shown at the right into 2 pairs of congruent triangles.

13. Reasoning: Are the triangles at the right congruent? Why or why not?
No: the triangles are the same shape, but they are not the same size.
More Perimeter

Name

More Perimeter

Jonah’s pool is a rectangle. The pool is 15 feet long and 10 feet wide. What is the perimeter of the pool?

Find the perimeter of the pool by answering 1 to 3.

1. Write in the missing measurements on the pool shown at the right.
   \[ P = 10 \, \text{ft} + 10 \, \text{ft} + 15 \, \text{ft} + 15 \, \text{ft} = 50 \, \text{ft} \]

2. Add the lengths of the sides.
   \[ P = 10 + 10 + 15 + 15 = 50 \, \text{ft} \]

3. What is the perimeter of the pool?
   \[ P = 50 \, \text{ft} \]

Find a formula for the perimeter of a rectangle by answering 4 to 10.

A square is a type of rectangle where all of the side lengths are equal.

Use the formula to find the perimeter of Jonah’s pool.

The formula for the perimeter of a rectangle is

More Perimeter

Name

Ongoing Assessment

Ask: Why is the formula for the perimeter of a square \( P = 4s \)? Because all of the sides of a square are equal, you can just multiply one side by 4 instead of adding each side.

Error Intervention

If students do not know the properties of rectangles,

then use I7: Quadrilaterals.

If students are having trouble remembering the formula for the perimeter of a square and the formula for the perimeter of a rectangle,

then have students create formula cards on note cards including examples of how to use the formula correctly.

If You Have More Time

Have students work in pairs to create a stack of 16 index cards with numbers 2 to 9 each written on cards. Have students draw two cards from the deck. The first card represents the length and the second card represents the width. The students work together to find the perimeter of a rectangle with the given dimensions. Have the students draw from the deck at least five different times and record their work.

Teacher Notes

© Pearson Education, Inc.
Rounding Numbers Through Thousands

Round each number to the nearest ten.

1. 326
2. 825
3. 162
4. 97

Round each number to the nearest hundred.

5. 1,427
6. 8,136
7. 1,308
8. 3,656

Round each number to the nearest thousand.

9. 18,366
10. 408,614
11. 29,430
12. 63,239

Round each number to the nearest ten thousand.

13. 12,108
14. 70,274
15. 33,625
16. 17,164

17. What is 681,542 rounded to the nearest hundred thousand?
   A 600,000    B 680,000    C 700,000    D 780,000

18. Mrs. Kennedy is buying pencils for each of 315 students at Hamilton Elementary. The pencils are sold in boxes of tens. How can she use rounding to decide how many pencils to buy?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Comparing and Ordering Numbers Through Thousands

Use the chart for help if you need to.

<table>
<thead>
<tr>
<th>hundred thousands</th>
<th>ten thousands</th>
<th>thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Compare. Write > or < for each.

1. 54,376 □ 45,763
2. 6,789 □ 9,876
3. 9,635 □ 9,536
4. 4,125 □ 3,225

Order the numbers from least to greatest.

5. 959,211  936,211  958,211

6. 456,318  408,405  459,751

7. Write three numbers that are greater than 43,000 and less than 44,000.

8. Which number has the greatest value?
   A 86,543,712   B 86,691,111   C 86,381,211   D 86,239,121

9. Tell how you could use a number line to determine which of two numbers is greater.
Name__________________________________________

Place Value Through Millions

Write the number in standard form and in word form.

1. \(300,000,000 + 70,000,000 + 2,000,000 + 500,000 + 10,000 + 2,000 + 800 + 5\)

   ________________________________
   ________________________________
   ________________________________
   ________________________________

Write the word form and tell the value of the underlined digit for each number.

2. \(4,600,028\) ________________________________
   ________________________________
   ________________________________

3. \(488,423,046\) ________________________________
   ________________________________
   ________________________________

4. **Number Sense** Write the number that is one hundred million more than \(15,146,481\). ________________

5. The population of a state was estimated to be \(33,871,648\). Write the word form.
   ________________________________
   ________________________________
   ________________________________
   ________________________________

86. **Which is the expanded form for \(43,287,005\)?**

   A \(4,000,000 + 300,000 + 20,000 + 8,000 + 700 + 5\)
   B \(40,000,000 + 3,000,000 + 200,000 + 80,000 + 7,000 + 5\)
   C \(400,000,000 + 30,000,000 + 2,000,000 + 8,000 + 500\)
   D \(4,000,000 + 30,000 + 2,000 + 800 + 70 + 5\)

7. In the number \(463,211,889\), which digit has the greatest value? Explain.
   ________________________________
   ________________________________
   ________________________________
   ________________________________
Rounding Numbers Through Millions

Round each number to the nearest thousand.
1. 6,326
2. 2,825
3. 2,162
4. 4,097

Round each number to the nearest ten thousand.
5. 31,427
6. 68,136
7. 76,308
8. 93,656

Round each number to the nearest hundred thousand.
9. 618,366
10. 409,614
11. 229,930
12. 563,239

Round each number to the nearest million.
13. 12,108,219
14. 7,570,274
15. 9,333,625
16. 4,307,164

17. What is 1,486,428 rounded to the nearest million?
   A 1,000,000    B 1,250,000    C 1,500,000    D 2,000,000

18. What is 681,542 rounded to the nearest hundred thousand?
   A 600,000    B 680,000    C 700,000    D 780,000

19. Round 2,672,358 to each place value?
   ten __________________________    hundred __________________________
   thousand _______________________    ten thousand _____________________
   hundred thousand ________________    million ________________________
Patterns and Equations

For 1 through 6, complete each table. Find each rule.

1. | x  | y |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>81</td>
<td>9</td>
</tr>
<tr>
<td>63</td>
<td>7</td>
</tr>
<tr>
<td>45</td>
<td>5</td>
</tr>
<tr>
<td>27</td>
<td>?</td>
</tr>
</tbody>
</table>

Rule: ________

2. | x  | y |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>42</td>
</tr>
<tr>
<td>8</td>
<td>56</td>
</tr>
<tr>
<td>10</td>
<td>70</td>
</tr>
<tr>
<td>12</td>
<td>?</td>
</tr>
</tbody>
</table>

Rule: ________

3. | x  | y |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>6</td>
</tr>
<tr>
<td>42</td>
<td>7</td>
</tr>
<tr>
<td>48</td>
<td>8</td>
</tr>
<tr>
<td>54</td>
<td>?</td>
</tr>
</tbody>
</table>

Rule: ________

4. | x  | y |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>15</td>
<td>45</td>
</tr>
<tr>
<td>20</td>
<td>60</td>
</tr>
<tr>
<td>25</td>
<td>?</td>
</tr>
</tbody>
</table>

Rule: ________

5. | x  | 2 | 4 | 6 | 8 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>y</td>
<td>22</td>
<td>44</td>
<td>66</td>
<td>?</td>
</tr>
</tbody>
</table>

Rule: ________

6. | x  | 9 | 12| 15| 18 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>y</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>?</td>
</tr>
</tbody>
</table>

Rule: ________

7. Lucas recorded the growth of a plant. How tall will the plant be on Day 5?

<table>
<thead>
<tr>
<th>Day</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height in inches</td>
<td>6</td>
<td>12</td>
<td>18</td>
<td>24</td>
<td>?</td>
</tr>
</tbody>
</table>

8. Danielle made a table of the rental fees at a video store. What is the rule?

<table>
<thead>
<tr>
<th>x</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>y</td>
<td>$3</td>
<td>$6</td>
<td>$9</td>
<td>$12</td>
</tr>
</tbody>
</table>

A \( y = 3x \)  C \( y = x + 3 \)  B \( y = 6x \)  D \( y = 4x \)

9. Curtis found a rule for a table. The rule he made is \( y = 7x \). What does the rule tell you about every \( y \)-value?
Estimating Sums

Estimate by rounding to the nearest ten.

1. 51 + 46
   \[ \_ \]
2. 34 + 71
   \[ \_ \]
3. 33 + 81
   \[ \_ \]
4. 53 + 69
   \[ \_ \]
5. 58 + 47
   \[ \_ \]
6. 39 + 64
   \[ \_ \]
7. 88 + 76
   \[ \_ \]
8. 33 + 23
   \[ \_ \]

Estimate by rounding to the nearest hundred.

9. 478 + 252
   \[ \_ \]
10. 680 + 743
    \[ \_ \]
11. 617 + 358
    \[ \_ \]
12. 569 + 780
    \[ \_ \]
13. 840 + 501
    \[ \_ \]
14. 764 + 571
    \[ \_ \]
15. 421 + 887
    \[ \_ \]
16. 458 + 681
    \[ \_ \]
17. 141 + 370
    \[ \_ \]
18. 605 + 825
    \[ \_ \]

19. Corey was a member of the baseball team for 4 years. Dan was a member of the football team for 3 years. The baseball team has 51 members and the football team has 96 members. About how many members do the two groups have together?
   \[ \_ \]

20. Karen sold 534 magazines and Carly sold 308. About how many total magazines did the two girls sell?
    \[ \_ \]

21. What is the largest number that can be added to 28 so that the sum is 50 when both numbers are rounded to the nearest ten? Explain.
    \[ \_ \]
Dividing with Objects

Divide. You may use counters or pictures to help.

1. \(27 \div 4\)  
2. \(32 \div 6\)  
3. \(17 \div 7\)  
4. \(29 \div 9\)

5. \(27 \div 8\)  
6. \(27 \div 3\)  
7. \(28 \div 5\)  
8. \(35 \div 4\)

9. \(19 \div 2\)  
10. \(30 \div 7\)  
11. \(17 \div 3\)  
12. \(16 \div 9\)

If you arrange these items into equal rows, tell how many will be in each row and how many will be left over.

13. 26 shells into 3 rows
14. 19 pennies into 5 rows
15. 17 balloons into 7 rows

16. Ms. Nikkel wants to divide her class of 23 students into 4 equal teams. Is this reasonable? Why or why not?

17. Which is the remainder for the quotient of \(79 \div 8\)?
   
   A 7  B 6  C 5  D 4

18. Pencils are sold in packages of 5. Explain why you need 6 packages in order to have enough for 27 students.
## Factoring Numbers

In 1 through 12, find all the factors of each number. Tell whether each number is prime or composite.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>81</td>
<td>2</td>
<td>43</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>53</td>
<td>6</td>
<td>87</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>88</td>
<td>10</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>3,235</td>
<td>14</td>
<td>1,212</td>
<td>15</td>
</tr>
</tbody>
</table>

17. Mr. Gerry’s class has 19 students, Ms. Vernon’s class has 21 students, and Mr. Singh’s class has 23 students. Whose class has a composite number of students?

18. Every prime number larger than 10 has a digit in the ones place that is included in which set of numbers below?

- A 1, 3, 7, 9
- B 1, 3, 5, 9
- C 0, 2, 4, 5, 6, 8
- D 1, 3, 7
Mental Math: Multiplying by Multiples of 10

Multiply. Use mental math.

1. \(4 \times 30 = \) __________
2. \(5 \times 90 = \) __________
3. \(9 \times 200 = \) __________
4. \(6 \times 500 = \) __________
5. \(3 \times 600 = \) __________
6. \(0 \times 600 = \) __________
7. \(90 \times 70 = \) __________
8. \(70 \times 400 = \) __________
9. \(50 \times 800 = \) __________
10. \(30 \times 800 = \) __________
11. \(90 \times 500 = \) __________
12. \(30 \times 4,000 = \) __________

13. **Number Sense**  How many zeros are in the product of \(60 \times 900\)? Explain how you know.

________________________________________________________________________

________________________________________________________________________

Truck A can haul 400 lb in one trip. Truck B can haul 300 lb in one trip.

14. How many pounds can Truck A haul in 9 trips? __________

15. How many pounds can Truck B haul in 50 trips? __________

16. How many pounds can Truck A haul in 70 trips?
   - **A** 280
   - **B** 2,800
   - **C** 28,000
   - **D** 280,000

17. There are 9 players on each basketball team in a league. Explain how you can find the total number of players in the league if there are 30 teams.

________________________________________________________________________

________________________________________________________________________
Estimating Products

Round each factor so that you can estimate the product mentally. Use rounding to estimate each product.

1. $38 \times 29$  
2. $71 \times 47$  
3. $54 \times 76$  
4. $121 \times 62$  
5. $548 \times 28$  
6. $823 \times 83$  
7. $67 \times 289$  
8. $183 \times 34$

Use compatible numbers to estimate each product.

9. $28 \times 87$  
10. $673 \times 85$  
11. $54 \times 347$  
12. $65 \times 724$  
13. $81 \times 643$  
14. $44 \times 444$  
15. $72 \times 285$  
16. $61 \times 761$

17. Vera has 8 boxes of paper clips. Each box has 275 paper clips. About how many paper clips does Vera have?

A 240  
B 1,600  
C 2,400  
D 24,000

18. Ana can put 27 stickers on each page of her scrapbook. The scrapbook has 112 pages. About how many stickers can Ana put in the scrapbook?

A 6,000  
B 4,000  
C 3,000  
D 2,000

19. A wind farm generates 330 kilowatts of electricity each day. About how many kilowatts does the wind farm produce in a week? Explain.

__________________________________________________________________________
__________________________________________________________________________

Practice  G67
Equal Parts of a Whole

Tell if each shows equal or unequal parts. If the parts are equal, name them.

1. 
2. 
3. 
4. 

Name the equal parts of the whole.

5. 
6. 
7. 
8. 

Use the grid to draw a region showing the number of equal parts named.

9. tenths

10. sixths

11. **Geometry** How many equal parts does this figure have?

   

12. Which is the name of 12 equal parts of a whole?

   - [ ] halves
   - [ ] tenths
   - [ ] sixths
   - [ ] twelfths
Name

Parts of a Region

Write a fraction for the part of the region below that is shaded.

1. 

2. 

Shade in the models to show each fraction.

3. \(\frac{2}{4}\) 

4. \(\frac{7}{10}\)

5. What fraction of the pizza is cheese?

6. What fraction of the pizza is mushroom?

7. **Number Sense** Is \(\frac{1}{4}\) of 12 greater than \(\frac{1}{4}\) of 8? Explain your answer.

8. A set has 12 squares. Which is the number of squares in \(\frac{1}{3}\) of the set?

   A 3   B 4   C 6   D 9

9. Explain why \(\frac{1}{2}\) of Region A is not larger than \(\frac{1}{2}\) of Region B.

Practice H2
Parts of a Set

1. Draw a group of squares with $\frac{9}{10}$ shaded.

2. How many squares do you need to draw altogether.

3. How many should be shaded?

Write the fraction for each shaded model.

4. [Diagram of shaded moons]

5. [Diagram of shaded hearts]

6. [Diagram of shaded suns]

7. [Diagram of shaded diamonds]

8. [Diagram of shaded circles]

9. [Diagram of shaded plus signs]

10. $\frac{8}{12}$

11. $\frac{15}{20}$
Equivalent Fractions

To find an equivalent fraction by multiplying, use this example.

\[
\frac{2}{3} \times 2 = \frac{4}{6}
\]

To find the equivalent fraction by dividing, use this example.

\[
\frac{10}{15} \div 5 = \frac{2}{3}
\]

Find the equivalent fraction.

1. \[\frac{1}{6} = \frac{18}{108}\]
2. \[\frac{6}{10} = \frac{5}{5}\]
3. \[\frac{6}{8} = \frac{4}{8}\]
4. \[\frac{6}{10} = \frac{20}{20}\]
5. \[\frac{8}{14} = \frac{7}{7}\]
6. \[\frac{9}{11} = \frac{22}{22}\]

Write each fraction in simplest form.

7. \[\frac{9}{12}\]
8. \[\frac{5}{10}\]
9. \[\frac{5}{25}\]
10. \[\frac{24}{36}\]

Multiply or divide to find an equivalent fraction.

11. \[\frac{11}{22}\]
12. \[\frac{6}{36}\]
13. \[\frac{9}{10}\]
14. \[\frac{5}{35}\]
15. \[\frac{7}{12}\]

16. At the air show, \(\frac{1}{3}\) of the airplanes were gliders. Which fraction is not an equivalent fraction for \(\frac{1}{3}\)?

A. \[\frac{5}{15}\]  
B. \[\frac{7}{21}\]  
C. \[\frac{6}{24}\]  
D. \[\frac{9}{27}\]

17. In Missy’s sports-cards collection, \(\frac{5}{7}\) of the cards are baseball. In Frank’s collection, \(\frac{12}{36}\) are baseball. Frank says they have the same fraction of baseball cards. Is he correct?
Mixed Numbers

Write $\frac{5}{2}$ as a mixed number without using fraction strips.

1. Divide 5 by 2 at the right.

$$\begin{array}{c}
5 \\
2 \\
\hline
1
\end{array}$$

2. Fill in the missing numbers below.

<table>
<thead>
<tr>
<th>Quotient</th>
<th>Remainder</th>
<th>Divisor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Write $\frac{5}{2}$ as a mixed number. _______

Write each improper fraction as a mixed number.

4. $\frac{12}{7}$ ______
5. $\frac{7}{3}$ ______
6. $\frac{9}{7}$ ______

7. $\frac{9}{4}$ ______
8. $\frac{29}{13}$ ______
9. $\frac{34}{8}$ ______

10. Write $2\frac{4}{5}$ as an improper fraction.

$$\frac{\text{Whole Number} \times \text{Denominator} + \text{Numerator}}{\text{Denominator}}$$

$$\begin{array}{c}
2 \\
4 \\
\hline
10
\end{array}$$

Change each mixed number to an improper fraction.

11. $2\frac{4}{5}$ ______
12. $8\frac{7}{9}$ ______
13. $3\frac{6}{7}$ ______

14. $7\frac{1}{8}$ ______
15. $4\frac{3}{7}$ ______
16. $5\frac{1}{4}$ ______
Congruent Figures and Motions

Congruent figures have the same size and shapes, although they may face different directions.

Write yes or no to tell if the figures are congruent.

1. 2. 3.

4. 5. 6.

Write slide, flip, or turn for each diagram.

6. 7. 8.

10. 11. 12.
Solids and Nets

For 1 and 2, predict what shape each net will make.

1. 

2. 

For 3–5, tell which solid figures could be made from the descriptions given.

3. A net that has 6 squares

4. A net that has 4 triangles

5. A net that has 2 circles and a rectangle

6. Which solid can be made by a net that has exactly one circle in it?
   A Cone  B Cylinder  C Sphere  D Pyramid

7. Draw a net for a triangular pyramid. Explain how you know your diagram is correct.
Views of Solid Figures

Draw the front, right, and top views of each solid figure.

1.

2.

3.

4.

5.
Congruent Figures

Congruent figures have the same size and shape, although they may face different directions.

Tell if the figures are congruent.

1. \[ \text{ } \] 2. \[ \text{ } \] 3. \[ \text{ } \]

4. \[ \text{ } \] 5. \[ \text{ } \] 6. \[ \text{ } \]

7. Divide this shape into 4 congruent shapes.

8. Divide this shape into 2 congruent shapes.

9. Divide this shape into 3 congruent shapes.

10. Divide this shape into 8 congruent shapes.
Perimeter

Look at Rectangle A and Rectangle B. Complete the table.

<table>
<thead>
<tr>
<th>Rectangle</th>
<th>Length</th>
<th>Width</th>
<th>Perimeter</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>So, Any</td>
<td>$l$</td>
<td>$w$</td>
<td>$2l + 2w$</td>
</tr>
</tbody>
</table>

Find the perimeter of these rectangles.

1. $l = 9 \quad w = 2$
   
   
2. $l = 6 \quad w = 7$

3. $l = 11 \quad w = 12$

4. $l = 10 \quad w = 5$

Find the perimeter of the square with the given side.

5. $s = 4$

6. $s = 2$

7. $s = 9$

8. $s = 6$

9. $s = 20$

10. $s = 5$

11. $s = 8$

12. $s = 10$
Name____________________

Rounding Numbers Through Thousands

Round each number to the nearest ten.
1. 320
2. 835
3. 132
4. 97

Round each number to the nearest hundred.
5. 1,047
6. 8,136
7. 1,308
8. 3,656

Round each number to the nearest thousand.
9. 18,366
10. 408,614
11. 29,430
12. 63,239

Round each number to the nearest ten thousand.
13. 12,108
14. 70,274
15. 33,625
16. 17,164

Round each number to the nearest hundred thousand.
17. What is 681,542 rounded to the nearest hundred thousand?
18. Mrs. Kennedy is buying pencils for each of 315 students at Hamilton Elementary. The pencils are sold in boxes of tens. How can she use rounding to decide how many pencils to buy?

Answers will vary.

Place Value Through Millions

Write the number in standard form and in word form.
1. 300,000,000 + 70,000,000 + 2,000,000 + 500,000 + 10,000 + 2,000 + 800 + 5
   372,512,805; three hundred seventy-two million, five hundred twelve thousand, eight hundred five

Write the word form and tell the value of the underlined digit for each number.
2. 4,600,026
   Four million, six hundred thousand, twenty-six; six hundred thousand

3. 1,088,129,098
   One billion, eighty-eight million, one hundred twenty-nine thousand, ninety-eight

Round each number to the nearest million.
4. Number Sense
   Write the number that is one hundred million more than 15,146,181
   15,146,181 + 100,000,000

5. The population of a state was estimated to be 33,871,648.
   Thirty-three million, eight hundred seventy-one thousand, six hundred forty-eight

6. Which is the expanded form for 40,287,005?
   A. 4,000,000 + 200,000 + 800 + 700 + 5
   B. 40,000,000 + 2,000,000 + 800,000 + 7,000 + 5
   C. 428,000,000 + 2,000,000 + 800,000 + 700 + 5
   D. 4,000,000 + 200,000 + 800,000 + 7,000 + 5

7. In the number 463,211,889, which digit has the greatest value? Explain.
   4; it is in the hundred millions place.

Rounding Numbers Through Millions

Round each number to the nearest thousand.
1. 6,326
2. 2,825
3. 2,142
4. 4,097

Round each number to the nearest ten thousand.
5. 31,027
6. 68,136
7. 76,308
8. 93,666

Round each number to the nearest hundred thousand.
9. 618,366
10. 408,405
11. 229,930
12. 563,239

Round each number to the nearest million.
13. 12,108,219
14. 7,570,271
15. 9,333,625
16. 4,307,164

Round each number to the nearest million.
17. What is 486,928 rounded to the nearest million?
   A. 1,000,000
   B. 1,250,000
   C. 1,500,000
   D. 2,000,000

18. Round 2,472,360 to each place value?
   Ten thousand 2,472,360
   Thousand 2,472,360
   Hundred thousand 2,472,360
   Million 2,472,360

For Practice F8

For Practice F9

For Practice F10

For Practice F11

Answers for Practice F8, F9, F10, F11
**Answers for Practice**

**F29, G7, G42, G59**
Name____________________

**Mental Math: Multiplying by Multiples of 10**

Multiply. Use mental math.

1. 4 \times 30 = 120
2. 5 \times 90 = 450
3. 9 \times 200 = 1800
4. 6 \times 500 = 3000
5. 3 \times 600 = 1800
6. 0 \times 600 = 0
7. 90 \times 70 = 6300
8. 70 \times 100 = 7000
9. 50 \times 800 = 40000
10. 30 \times 800 = 24000
11. 90 \times 500 = 45000
12. 30 \times 4000 = 120000

**Estimating Products**

Round each factor so that you can estimate the product mentally. Use rounding to estimate each product.

1. 38 \times 29 \approx 1200
2. 71 \times 67 \approx 3500
3. 51 \times 75 \approx 4000
4. 121 \times 62 \approx 6000
5. 518 \times 28 \approx 15000
6. 823 \times 83 \approx 64000
7. 67 \times 289 \approx 21000
8. 163 \times 34 \approx 6000

Use compatible numbers to estimate each product.

9. 28 \times 87 \approx 2400
10. 673 \times 85 \approx 55000

**Parts of a Region**

Write a fraction for the part of the region below that is shaded.

1. __________
2. __________
3. __________
4. __________
5. __________
6. __________
7. __________
8. __________
9. __________
10. __________

Shade in the models to show each fraction.

3. \frac{1}{4}
4. \frac{1}{4}

5. What fraction of the pizza is cheese?

6. What fraction of the pizza is mushroom?

7. Number Sense

\(\frac{3}{8}\) of 12 is 3 and \(\frac{3}{8}\) of 8 is 2; 3 > 2.

8. A set has 12 squares. Which is the number of squares in \(\frac{2}{3}\) of the set?

A. 3
B. 6
C. 9
D. 6

9. Explain why \(\frac{3}{8}\) of Region A is not larger than \(\frac{1}{2}\) of Region B.

They each have the same region shaded for \(\frac{1}{2}\).
### Parts of a Set
1. Draw a group of squares with \( \frac{3}{5} \) shaded. **Answers will vary.**

2. How many squares do you need to draw altogether? **10**

3. How many should be shaded? **9**

Write the fraction for each shaded model.

<table>
<thead>
<tr>
<th>Models</th>
<th>Fractions</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/5</td>
<td>3/4</td>
</tr>
<tr>
<td>2/3</td>
<td>1/2</td>
</tr>
<tr>
<td>6/8</td>
<td>2/5</td>
</tr>
<tr>
<td>7/9</td>
<td>2/3</td>
</tr>
</tbody>
</table>

Draw a model and shade it in to show each fraction.

4. \( \frac{8}{10} \)

5. \( \frac{3}{4} \)

6. \( \frac{7}{8} \)

7. \( \frac{2}{5} \)

8. \( \frac{1}{9} \)

9. \( \frac{3}{6} \)

### Equivalent Fractions
To find an equivalent fraction by multiplying, use this example. **Answers will vary.**

<table>
<thead>
<tr>
<th>Fractions</th>
<th>New Fractions</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{1}{6} )</td>
<td>( \frac{2}{12} )</td>
</tr>
<tr>
<td>( \frac{5}{10} )</td>
<td>( \frac{10}{20} )</td>
</tr>
<tr>
<td>( \frac{3}{4} )</td>
<td>( \frac{6}{8} )</td>
</tr>
</tbody>
</table>

Write each fraction in simplest form.

<table>
<thead>
<tr>
<th>Fractions</th>
<th>New Fractions</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{9}{12} )</td>
<td>( \frac{3}{4} )</td>
</tr>
<tr>
<td>( \frac{15}{20} )</td>
<td>( \frac{3}{4} )</td>
</tr>
<tr>
<td>( \frac{24}{36} )</td>
<td>( \frac{2}{3} )</td>
</tr>
</tbody>
</table>

Multiply or divide to find an equivalent fraction. **Sample answers given**

<table>
<thead>
<tr>
<th>Fractions</th>
<th>New Fractions</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{1}{2} )</td>
<td>( \frac{2}{4} )</td>
</tr>
<tr>
<td>( \frac{3}{6} )</td>
<td>( \frac{1}{2} )</td>
</tr>
<tr>
<td>( \frac{11}{22} )</td>
<td>( \frac{1}{2} )</td>
</tr>
</tbody>
</table>

### Mixed Numbers
Write \( \frac{3}{2} \) as a mixed number without using fraction strips.

1. Divide \( \frac{3}{2} \) by 2 at the right. **2 1/2**

2. Fill in the missing numbers below.
   - Quotient **2**
   - Remainder **1**
   - Divisor **2**

Write each improper fraction as a mixed number.

<table>
<thead>
<tr>
<th>Fractions</th>
<th>Mixed Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{13}{7} )</td>
<td>( 2 \frac{1}{7} )</td>
</tr>
<tr>
<td>( \frac{3}{2} )</td>
<td>( 1 \frac{1}{2} )</td>
</tr>
<tr>
<td>( \frac{8}{2} )</td>
<td>( 4 \frac{1}{2} )</td>
</tr>
</tbody>
</table>

10. Write \( \frac{2}{3} \) as an improper fraction.
   - Whole Number \( = \) **2**
   - Denominator \( = \) **3**
   - Numerator \( = \) **1**

   \( \frac{2 \times 5 + 1}{15} = \frac{11}{15} \)

Change each mixed number to an improper fraction.

<table>
<thead>
<tr>
<th>Mixed Numbers</th>
<th>Improper Fractions</th>
</tr>
</thead>
<tbody>
<tr>
<td>( 2 \frac{1}{5} )</td>
<td>( \frac{11}{5} )</td>
</tr>
<tr>
<td>( 6 \frac{7}{9} )</td>
<td>( \frac{64}{9} )</td>
</tr>
<tr>
<td>( 3 \frac{3}{7} )</td>
<td>( \frac{24}{7} )</td>
</tr>
</tbody>
</table>

### Congruent Figures and Motions
Congruent figures have the same size and shapes, although they may face different directions.

Write yes or no to tell if the figures are congruent.

1. **No**
2. **Yes**
3. **No**
4. **Yes**
5. **No**
6. **Yes**

Write slide, flip, or turn for each diagram.

### Answers for Practice
- **H3, H14, H18, I8**
**Name__________________________**

**Practice I10**

**Solids and Nets**

For 1 and 2, predict what shape each net will make.

1. ____________
2. ____________

**Answers:** rectangular prism, square pyramid

For 3–5, tell which solid figures could be made from the descriptions given.

3. A net that has 6 squares
4. A net that has 4 triangles
5. A net that has 2 circles and a rectangle

6. Which solid can be made by a net that has exactly one circle in it?

A Cone  B Cylinder  C Sphere  D Pyramid

7. Draw a net for a triangular pyramid. Explain how you know your diagram is correct.

Answers will vary.

**Answers for Practice I10, I11, I13, I45**
1. Round 43,864 to the nearest ten thousand.
   A 40,000
   B 43,000
   C 43,900
   D 44,000

2. Which is the expanded form of 4,321,189?
   A 4,000,000 + 300,000 + 20,000 + 1,000 + 100 + 80 + 9
   B 4,000,000 + 300,000 + 21,000 + 100 + 89
   C 4,000,000 + 300,000 + 20,000 + 1,000 + 90 + 9
   D 400,000 + 300,000 + 21,000 + 1,000 + 100 + 80 + 9

3. Which digit is in the thousands place? 128,698,473
   A 1
   B 2
   C 6
   D 8

4. Round this number to the nearest ten million. 15,679,841
   A 5,000,000
   B 11,000,000
   C 15,000,000
   D 16,000,000

5. | x   | 20 | 25 | 30 | 35 |
    |-----|----|----|----|----|
    | y   | 12 | 17 | 22 | ?  |

   If x = 35, what is the value of y?
   A 30
   B 27
   C 25
   D 23

6. Estimate by rounding to the nearest hundred. 689 + 228
   A 628
   B 800
   C 889
   D 900
7. Find the quotient and the remainder. 
   \(26 \div 4\)
   - A \(4 \text{ R} 2\)
   - B \(6 \text{ R} 2\)
   - C \(6 \text{ R} 4\)
   - D \(8 \text{ R} 2\)

8. What are all the factors of 12?
   - A \(1, 6, 12\)
   - B \(1, 2, 6, 12\)
   - C \(1, 2, 3, 6, 12\)
   - D \(1, 2, 3, 4, 6, 12\)

9. The comic book store packs 30 comic books into one envelope. How many comic books will be packed into 30 envelopes?
   - A 90
   - B 300
   - C 600
   - D 900

10. Estimate the product by rounding each factor.
    \(28 \times 23\)
    - A 900
    - B 600
    - C 500
    - D 400

11. Name the equal parts of the whole.
    - A fifths
    - B fourths
    - C thirds
    - D halves

12. Write the fraction for the shaded part of the region.
    - A \(\frac{4}{5}\)
    - B \(\frac{5}{8}\)
    - C \(\frac{6}{8}\)
    - D \(\frac{7}{8}\)
13. Find the fraction for the shaded parts of this set.

A \( \frac{3}{5} \)  
B \( \frac{4}{5} \)  
C \( \frac{5}{6} \)  
D \( \frac{4}{7} \)

14. Which fraction is not equivalent to \( \frac{2}{3} \)?

A \( \frac{4}{6} \)  
B \( \frac{8}{12} \)  
C \( \frac{9}{12} \)  
D \( \frac{10}{15} \)

15. What is the mixed number for this improper fraction? \( \frac{15}{8} \)

A \( 2\frac{7}{8} \)  
B \( 2\frac{1}{8} \)  
C \( 1\frac{7}{8} \)  
D \( 1\frac{5}{8} \)

16. What motion does this shape show?

A slide  
B flip  
C turn  
D motion

17. Which solid can be made from this net?

A square  
B cube  
C triangular prism  
D rectangular prism

18. What would the top view of this solid look like?

A  
B  
C  
D
19. Which set of figures is not congruent?

A  

B  

C  

D  

20. What is the perimeter of this garden?

A  12 ft  

B  20 ft  

C  22 ft  

D  24 ft
1. Round 43,864 to the nearest ten thousand.
   A 40,000
   B 43,000
   C 43,900
   D 44,000

2. Which is the expanded form of 4,321,189?
   A 4,000,000 + 300,000 + 21,000 + 1,000 + 9
   B 4,000,000 + 3,000,000 + 200,000 + 100 + 89
   C 4,000,000 + 300,000 + 20,000 + 1,000 + 90 + 9
   D 400,000 + 300,000 + 21,000 + 1,000 + 100 + 89

3. Which digit is in the thousands place?
   128,698,473
   A 1
   B 2
   C 6
   D 8

4. Round this number to the nearest ten million.
   15,679,841
   A 5,000,000
   B 11,000,000
   C 15,000,000
   D 16,000,000

5. If \( x = 35 \), what is the value of \( y \)?
   A 30
   B 27
   C 25
   D 23

6. Estimate by rounding to the nearest hundred.
   689
   A 628
   B 800
   C 889
   D 900

7. Find the quotient and the remainder.
   26 ÷ 4
   A 4 R 2
   B 6 R 2
   C 6 R 4
   D 8 R 2

8. What are all the factors of 12?
   A 1, 6, 12
   B 1, 2, 6, 12
   C 1, 2, 3, 6, 12
   D 1, 2, 3, 4, 6, 12

9. The comic book store packs 30 comic books into one envelope. How many comic books will be packed into 30 envelopes?
   A 90
   B 300
   C 600
   D 900

10. Estimate the product by rounding each factor.
    \( 28 \times 23 \)
    A 900
    B 600
    C 500
    D 400

11. Name the equal parts of the whole.
    A fifths
    B fourths
    C thirds
    D halves

12. Write the fraction for the shaded part of the region.
    A \( \frac{1}{5} \)
    B \( \frac{5}{8} \)
    C \( \frac{6}{8} \)
    D \( \frac{7}{8} \)

13. Find the fraction for the shaded parts of this set.
    A \( \frac{3}{5} \)
    B \( \frac{4}{5} \)
    C \( \frac{5}{6} \)
    D \( \frac{4}{7} \)

14. Which fraction is not equivalent to \( \frac{2}{3} \)?
    A \( \frac{4}{6} \)
    B \( \frac{8}{12} \)
    C \( \frac{9}{12} \)
    D \( \frac{10}{15} \)

15. What is the mixed number for this improper fraction? \(\frac{15}{8}\)
    A \( 1 \frac{7}{8} \)
    B \( 2 \frac{1}{8} \)
    C \( 1 \frac{7}{8} \)
    D \( 1 \frac{5}{8} \)

16. What motion does this shape show?
    A slide
    B flip
    C turn
    D motion

17. Which solid can be made from this net?
    A square
    B cube
    C triangular prism
    D rectangular prism

18. What would the top view of this solid look like?
    A
    B
    C
    D

19. Which set of figures is not congruent?
    A
    B
    C
    D

20. What is the perimeter of this garden?
    A 12 ft
    B 20 ft
    C 22 ft
    D 24 ft