Rounding to Hundreds
Multiple-Digit Addition with Regrouping

As always, add the units first. A student may become so proficient at adding multiple digit numbers that he can add from the left, but that method is not appropriate at this stage. For now, always add from right to left, or from smaller to larger. Remember that you add units to units, tens to tens, and hundreds to hundreds. Whenever you add two numbers, always add the same values. "To combine, you must be the same kind." The examples show the same problems worked out with place value notation and regular notation. If you have lined paper I suggest you turn it sideways to help keep the values in the proper places.

Rounding and Estimating to Hundreds

When adding large numbers, encourage the student to estimate the answer first. We have learned how to round and estimate to the tens place. Now we will increase our understanding by rounding and estimating to the hundreds place.

When you round a number to the nearest multiple of 100, there will be a number in the hundreds place but only zeros in the tens and units places that are to the right of the hundreds place. When rounding, only look at the number to the immediate right of the place value being considered—in this case the tens place. This number determines whether to stay the same or be increased by one. I tell the students we call it rounding because the tens and units are going to be a "round" zero. When we round a number such as 653, we can see one reason why we recommend rounding 5s up instead of down. Although 650 is halfway between 600 and 700, all the other 650s (651, 652, and so on) are closer to 700. Rounding 5s upward makes sense because if there is another non-zero digit, the number will be closer to the higher number we could round to.

When comparing an estimated answer to the final answer, you sometimes see a fairly large difference. For example, 451 will round to 500, and 352 will round to 400. Adding 500 + 400 gives 900, but 451 + 352 is only 803. Remember that an estimate is not intended to be exact. The time to be concerned would be if the final answer were 8,000 or 80.

Example 1
Round 383 to the nearest hundreds place.

The first step is to find the two multiples of a hundred that are nearest to 383. The lower one is 300 and the higher one is 400 because 383 is between 300 and 400. If the student has trouble finding these numbers, begin by placing your finger over the 83, so that all you have is a 3 in the hundreds place, which is 300. Then add one more to the hundreds to find the 400. I often write the numbers 300 and 400 above the number 383 on both sides as in figure 1.

Figure 1

300   400
   383

Look at the number in the tens place. Does it fall in 0 through 4 or in 5 through 9? Since it is an 8, it is in the latter group, which means we round up to the next number, which is 400. Rounded to the nearest hundred, 383 is 400.
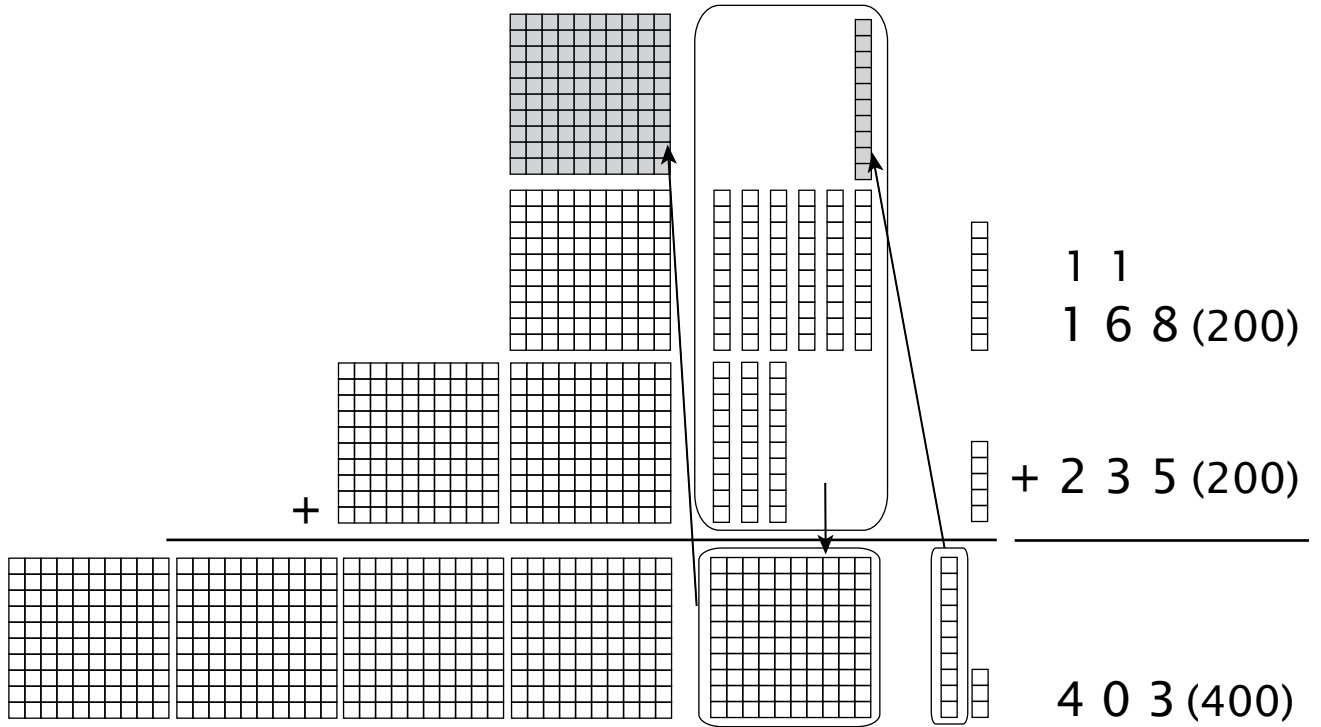
Example 2
Round 547 to the nearest hundreds place.

500   600   1. Find the multiples of one hundred nearest
   547   to 547.

(500) 600   2. We know that 4 goes to the lower number,
   547   500.

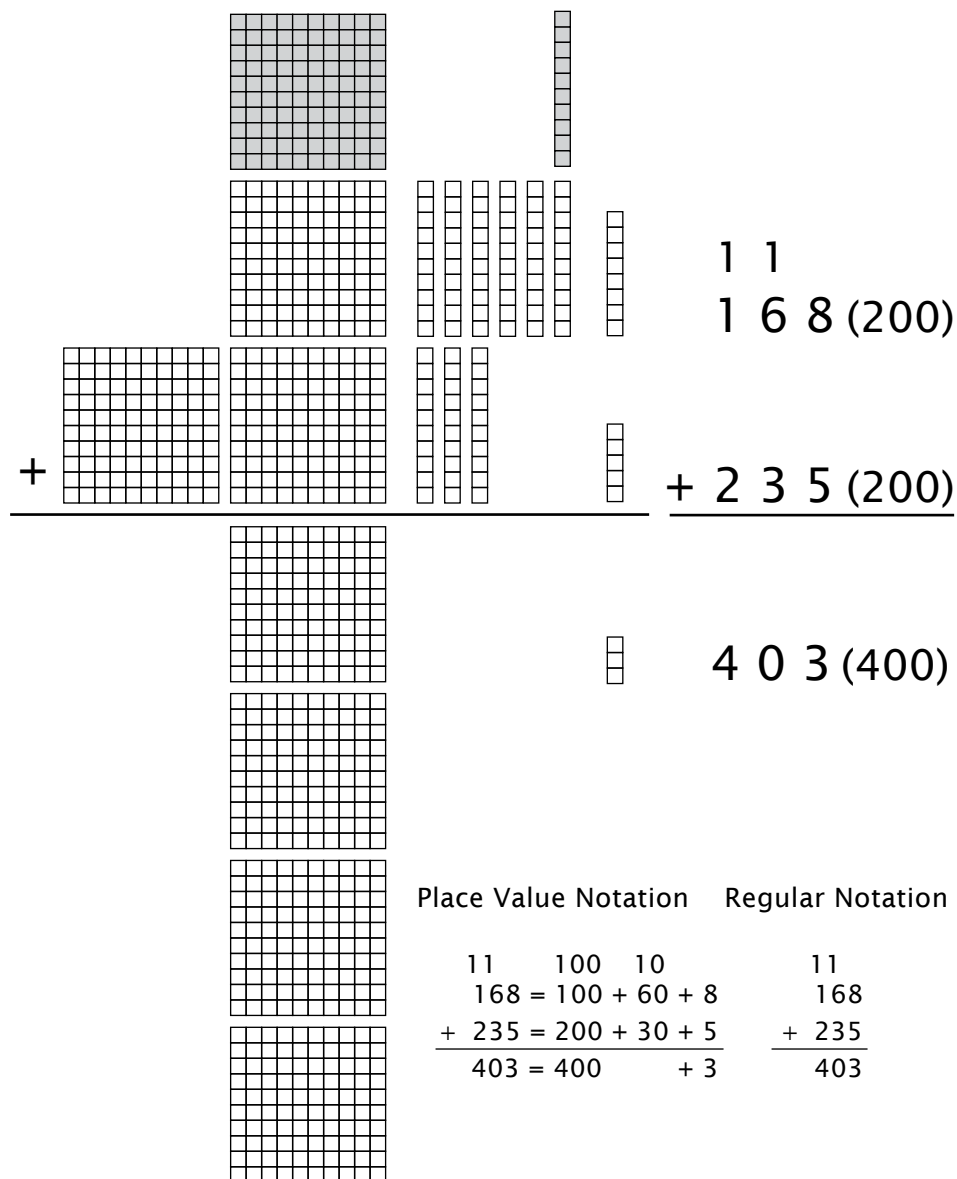In examples 3 and 4, the estimates are to the right in parentheses.

Example 3

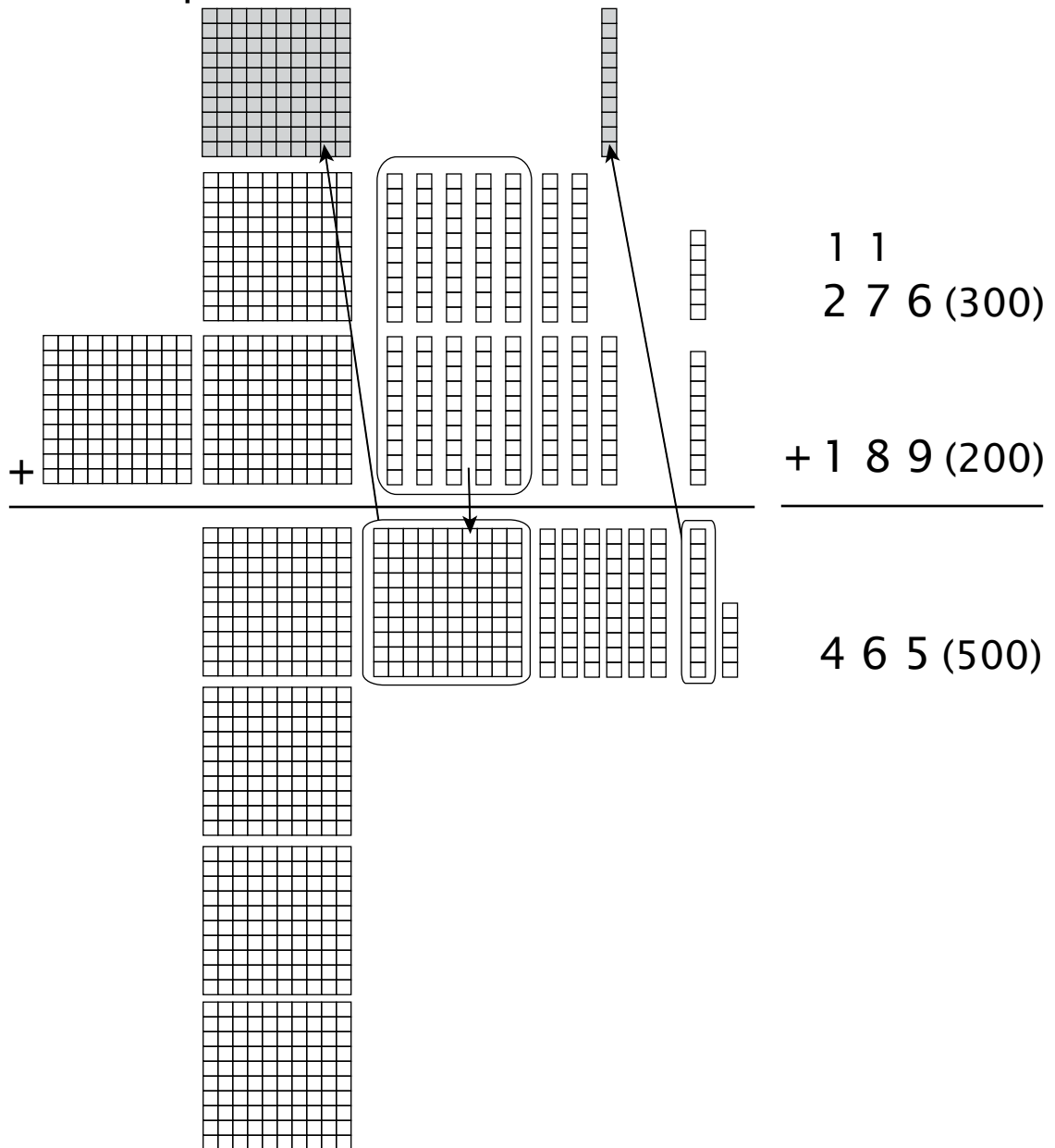$$\begin{array}{r} 1\ 1 \\ 1\ 6\ 8\ (200) \\ +\ 2\ 3\ 5\ (200) \\ \hline 4\ 0\ 3\ (400) \end{array}$$

Five units plus 8 units equals 13, which is 1 ten and 3 units. We move the ten (or carry it) to the tens place as indicated by the arrow. Then 6 tens plus 3 tens plus the 1 ten from the result of adding in the units place equals 1 hundred. The 1 hundred is moved to the hundreds place as shown. Example 3 is continued on the next page.
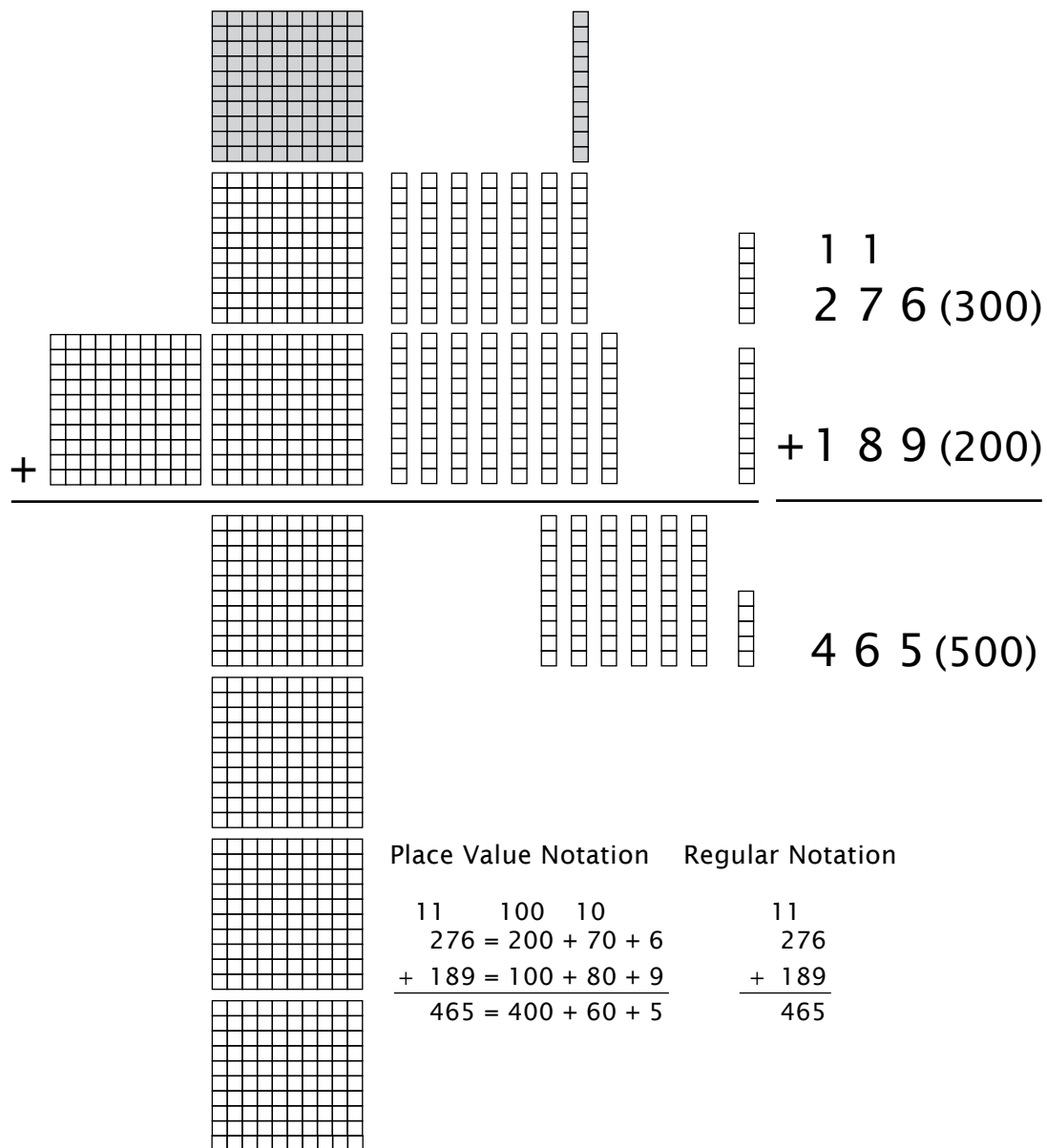
Example 3 (continued)
Adding all the hundreds gives us the answer of 4 hundreds,
0 tens, and 3 units or 403. The picture below shows the result
after regrouping.

$$
\begin{array}{r}
1\ 1 \\
1\ 6\ 8\ (200) \\
+\ 2\ 3\ 5\ (200) \\
\hline
4\ 0\ 3\ (400)
\end{array}
$$

Place Value Notation   Regular Notation

$$
\begin{array}{rlr}
11 \quad 100 \quad 10 & & 11 \\
168 = 100 + 60 + 8 & & 168 \\
+\ 235 = 200 + 30 + 5 & & +\ 235 \\
\hline
403 = 400 \qquad + 3 & & 403
\end{array}
$$

Example 4

$$
\begin{array}{r}
\overset{1\ 1}{2\ 7\ 6}\ (300) \\
+\ 1\ 8\ 9\ (200) \\
\hline
4\ 6\ 5\ (500)
\end{array}
$$

Example 4 (continued)

1 1
2 7 6 (300)

+1 8 9 (200)

4 6 5 (500)

Place Value Notation   Regular Notation

11   100   10   11
276 = 200 + 70 + 6   276
+ 189 = 100 + 80 + 9   + 189
465 = 400 + 60 + 5   465

Add the money. The first one is done for you.

1.
$$\begin{array}{r} \overset{1\ 1}{\ \$3.2\ 1} \\ +\ \ \ 4.9\ 9 \\ \hline \$8.2\ 0 \end{array}$$

2.
$$\begin{array}{r} \$7.0\ 9 \\ +\ 1.9\ 2 \\ \hline \end{array}$$

3.
$$\begin{array}{r} \$3.3\ 3 \\ +\ 1.4\ 4 \\ \hline \end{array}$$

4.
$$\begin{array}{r} \$6.5\ 0 \\ +\ 2.7\ 7 \\ \hline \end{array}$$

5.
$$\begin{array}{r} \$4.0\ 0 \\ +\ 2.5\ 1 \\ \hline \end{array}$$

6.
$$\begin{array}{r} \$5.1\ 9 \\ +\ 1.3\ 8 \\ \hline \end{array}$$

7.
$$\begin{array}{r} \$1.0\ 0 \\ +\ \ .7\ 5 \\ \hline \end{array}$$

8.
$$\begin{array}{r} \$2.0\ 3 \\ +\ 1.9\ 0 \\ \hline \end{array}$$

9. $8.7 5
    + .8 0
    ⎯⎯⎯⎯⎯

10. Rose went shopping. If she spent $5.25 in one store and $3.38 in another store, how much did she spend in all?

    _____

11. Chance had $2.63 in his pocket. He got $5.50 in a birthday card. How much money does he have now?

    _____

12. Joseph bought toys for his pug dog, Max. If he spent $2.99 for a rubber bone and $3.61 for a ball, how much did he spend in all?

    _____

Add the money.

1. $7.6 5
    + .6 0

2. $6.3 1
    + 1.2 9

3. $5.8 3
    + .2 4

4. $3.1 9
    + .9 0

5. $2.0 0
    + .9 8

6. $1.0 3
    + 1.2 5

7. $3.7 2
    + 4.0 8

8. $1.9 9
    + 1.8 2

9. $2.8 7
      + 6.8 9

10. Elizabeth found $3.45 in her drawer and $1.99 behind her dresser. How much money did she find in all?

    _____

11. Meredith wants to buy a book that costs $5.55 and a box of crayons that costs $2.15. How much money does she need?

    _____

12. Daniel's brother gave him $6.34. His sister gave him $2.95. How much money was Daniel given altogether?

    _____

Add the money.

1. $2.1 3
   + 1.9 2
   ———

2. $4.7 1
   + 1.3 6
   ———

3. $6.4 1
   + .3 9
   ———

4. $5.0 0
   + 2.5 0
   ———

5. $6.6 3
   + 2.4 4
   ———

6. $7.3 5
   + 1.0 5
   ———

7. $1.6 3
   + .7 2
   ———

8. $4.9 9
   + 3.7 9
   ———

9.　　$6.3 3
　　+ 2.9 1
　　─────────

10. Caleb lost $5.10 yesterday and $3.91 today. How much did he lose altogether?

　　_____

11. Caleb found $2.50 of his lost money (see #10). Timothy felt sorry for him and gave him $4.50. How much money does Caleb have now?

　　_____

12. Thomas has $3.72 in his left pocket and $3.68 in his right pocket. How much money does he have? Does he have enough to buy a toy that costs $6.00?

　　_____

Add. Regroup if needed.

1. $1.6 6
    + 4.0 8

2. $3.0 9
    + 2.5 6

3. $3.5 7
    + 2.6 2

4.   4 2 2
    + 3 8 9

5.   1 9
    + 1 6

6.   1 7
    + 2 5

These subtraction facts review subtracting 9.

7. 1 2
    − 9

8. 1 8
    − 9

9.   9
    − 9

10. 1 4
    − 9

11. 1 7
    − 9

12. 1 3
    − 9

13. $\begin{array}{r} 1\ 6 \\ -\ 9 \\ \hline \end{array}$ 14. $\begin{array}{r} 1\ 5 \\ -\ 9 \\ \hline \end{array}$

Fill in the blanks and say the amount.

15.
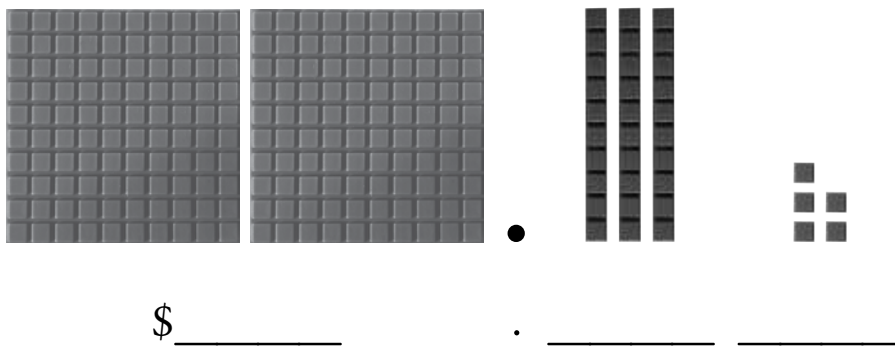
$\$$_____   . _____ _____

16. Nicholas wrapped 9 Christmas gifts. Two gifts are left to wrap. How many gifts did he have to start with? Solve for G.
G – 9 = 2 gifts

_____

17. Forty–six grown-ups and sixty–three children are coming to the wedding. Estimate how many chairs are needed, and then add to find the exact number.

_____

18. Jacob spent $2.78 for a sandwich and $1.19 for a drink. How much did he spend in all?

_____

Add. Regroup if needed.

1. $1.6 8
    + 4.7 7

2. $4.5 6
    + 4.4 4

3. $2.6 3
    + .5 1

4.   6 8 4
    + 1 2 2

5.   6 2
    + 2 9

6.   8 3
    +   7

These subtraction facts review subtracting 8.

7. 1 1
    − 8

8.   9
    − 8

9. 1 7
    − 8

10. 1 2
    − 8

11. 1 4
    − 8

12. 1 3
    − 8

13.   1 5
      − 8

14.   1 6
      − 8

Fill in the blanks and say the amount.

15.

$\$\underline{\hspace{3em}}\quad.\quad\underline{\hspace{3em}}\ \underline{\hspace{3em}}$

16. Emily lost 8 dimes. If she has 5 dimes left, how many did she have to start with? Solve for the unknown. Set this up like #16 on 12D.

      _____

17. Ava wrapped 267 candies with nuts and 197 plain candies to sell in her dad's shop. How many candies did she wrap in all? Round to hundreds and estimate, and then solve.

      _____

18. Michael has 3 dimes and 5 nickels. Find out how much money he has in all. Use a dollar sign and decimal point when writing your answer.

      _____

Add. Regroup if needed.

1. $2.7 8
     + 6.5 8

2. $3.5 2
     + 1.7 7

3. $8.9 1
     + .0 5

4.   3 7 9
     + 2 6 4

5.   5 4
     + 1 8

6.   4 7
     +   9

These subtraction facts review subtracting 8 and doubles.

7. 1 2
    – 6

8. 1 3
    – 8

9. 1 0
    – 5

10. 1 4
    – 7

11. 1 2
    – 8

12. 1 7
    – 8

13.   8
     − 4
     ———

14.   6
     − 3
     ———

Fill in the blanks and say the amount.

15.

$____ . _____ _____

16. I watched 8 birds fly away from my bird feeder. If 8 birds are left on the feeder, how many were there to start with? Solve for the unknown.

_____

17. Bria has three nickels and five pennies. How much money does she have in all? Use a dollar sign and decimal point when writing your answer.

_____

18. Kara talked on the phone 35 minutes yesterday and 17 minutes today. How many minutes did she talk in all?

_____

Answer the questions and fill in the crossword puzzle.

Across

2. The coin worth one cent is a _____ .

4. A _____ is worth one hundred cents.

7. The coin worth ten cents is a _____ .

Down

1. How many cents are in a dime? _____

3. The coin worth five cents is a _____ .

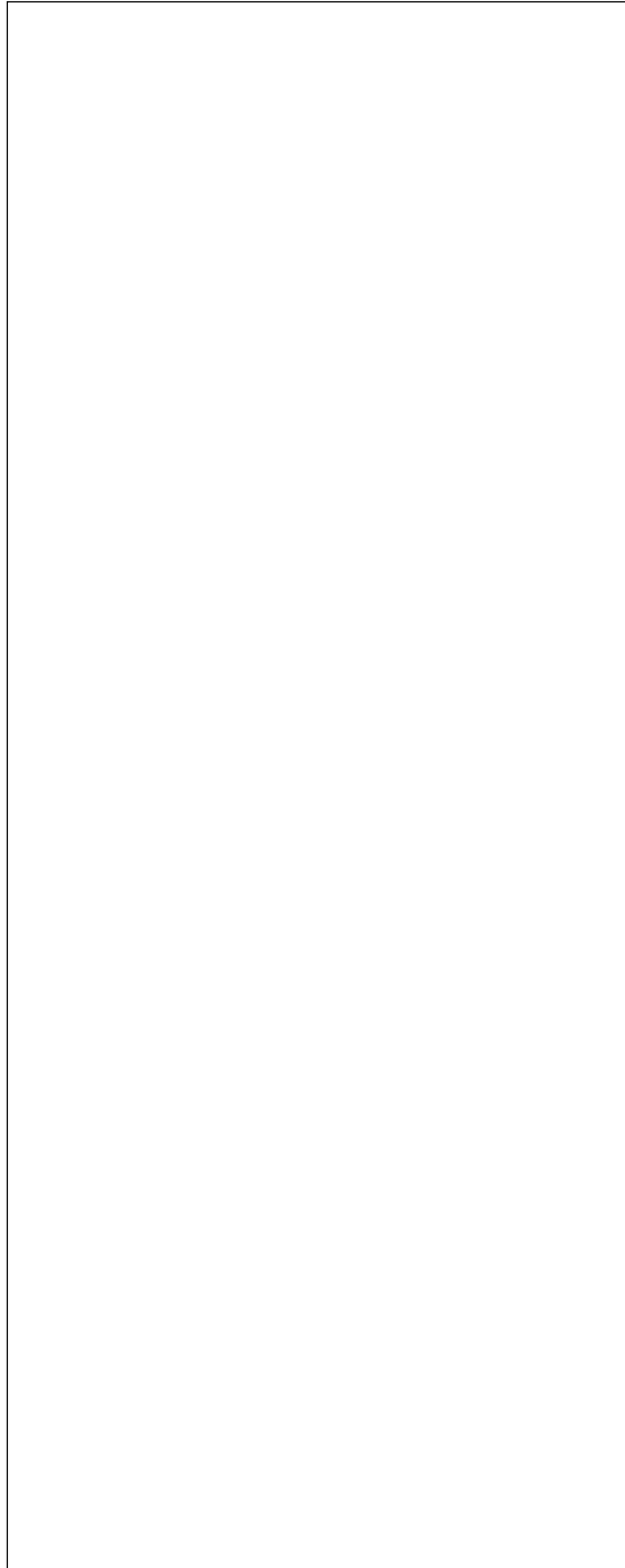5. How many cents in a penny? _____

6. How many cents in a nickel? _____

Draw pictures to help you review subtraction facts. Cross out the pictures you subtract each time.

1. Jim blew 18 soap bubbles. Draw the bubbles.

2. Jeff popped nine bubbles. How many bubbles are left? _____

3. The cat broke three bubbles. How many bubbles are left? _____

4. Four bubbles landed on the table and broke. How many bubbles are left? _____

5. Two bubbles floated out the door and disappeared. Now how many bubbles are left? _____

Write using place value notation.

1. 628 = _____ + _____ + _____

2. 49 = _____ + _____

Add using place value notation.

3.   1 6 → 1 0 + 6
    + 3 2 → 3 0 + 2

4.   3 8 0 → 3 0 0 + 8 0 + 0
    + 5 1 6 → 5 0 0 + 1 0 + 6

5.   5 4 → 5 0 + 4
    + 2 2 → 2 0 + 2

6.   4 3 3 → 4 0 0 + 3 0 + 3
    + 4 2 5 → 4 0 0 + 2 0 + 5

Round to the nearest ten and estimate. Then find the exact answer.

7.   3 4   (   )
    + 6 1   (   )
    ‾‾‾‾‾‾   (   )

8.   1 2   (   )
    + 1 6   (   )
    ‾‾‾‾‾‾   (   )

Compare, and then fill in the oval with <, >, or =.

9. 4 + 6 $\bigcirc$ 6 + 4

10. 49 $\bigcirc$ 94

Solve for the unknown.

11. $7 + X = 14$

12. $5 + Y = 8$

13. $8 + A = 16$

14. I saw 45 deer and 12 moose in the park. How many large animals did I see?

    _____

15. Riley saved 132 pennies and 160 nickels. How many coins has she saved?

    _____

Systematic Review 10E

1. $3.20
   "three dollars and twenty cents"
2. 2 dollars, 3 dimes, and 1 penny
   "two dollars and thirty-one cents"
3. 4 dollars, 5 dimes, and 5 pennies
   "four dollars and fifty-five cents"
4. 1 dollar and 6 pennies
   "one dollar and six cents"
5. 3 dollars, 7 dimes, and 8 pennies
   "three dollars and seventy-eight cents"
6. 10, 20, 30, 40, 50, 60, 70, <u>80</u>¢
7.
$$\begin{array}{r} \overset{1}{17} \\ +18 \\ \hline 35 \end{array}$$
8.
$$\begin{array}{r} 555 \\ +132 \\ \hline 687 \end{array}$$
9.
$$\begin{array}{r} \overset{1}{49} \\ +34 \\ \hline 83 \end{array}$$
10. 80
11. 10
12. 30
13. 5, 10, 15, 20, 25, 30,
    35, 40, 45¢ = $0.45
14. 5 + 2 = 7
    7 + 2 = 9 roses
15. 30¢

Systematic Review 10F

1. $1.08
   "one dollar and eight cents"
2. 1 dollar, 1 dime, and 6 pennies
   "one dollar and sixteen cents"
3. 3 dollars and 9 pennies
   "three dollars and nine cents"
4. 2 dollars, 6 dimes, and 5 pennies
   "two dollars and sixty-five cents"
5. 4 dollars and 7 dimes
   "four dollars and seventy cents"

6. 5, 10, <u>15</u>¢
7.
$$\begin{array}{r} 92 \\ +\ 4 \\ \hline 96 \end{array}$$
8.
$$\begin{array}{r} 337 \\ +202 \\ \hline 539 \end{array}$$
9.
$$\begin{array}{r} \overset{1}{61} \\ +29 \\ \hline 90 \end{array}$$
10. 10 > 7
11. 8 = 8
12. 27 < 72
13. $8.69
14. 3 + 4 = 7
    7 + 8 = 15 miles
15. 29 + 18 = 47 miles

Lesson Practice 11A

1. 200
2. 200
3. 400
4. done
5.
$$\begin{array}{r} (600) \\ +(200) \\ \hline (800 \end{array} \quad \begin{array}{r} \overset{1\ 1}{628} \\ +175 \\ \hline 803 \end{array}$$
6.
$$\begin{array}{r} (400) \\ +(300) \\ \hline (700) \end{array} \quad \begin{array}{r} \overset{1\ 1}{359} \\ +254 \\ \hline 613 \end{array}$$
7.
$$\begin{array}{r} (500) \\ +(200) \\ \hline (700) \end{array} \quad \begin{array}{r} \overset{1}{537} \\ +233 \\ \hline 770 \end{array}$$
8.
$$\begin{array}{r} (200) \\ +(500) \\ \hline (700) \end{array} \quad \begin{array}{r} \overset{1\ 1}{168} \\ +452 \\ \hline 620 \end{array}$$
9.
$$\begin{array}{r} (100) \\ +(100) \\ \hline (200) \end{array} \quad \begin{array}{r} \overset{1\ 1}{123} \\ +\ 88 \\ \hline 211 \end{array}$$