

## Lesson 11 Rounding to Hundreds, Multiple Digit Addition with Regrouping

As we have been doing and always will do, add the units first. There may come a time when a student is so proficient at adding multiple digit numbers he will add from the left, but this is down the road and not the way the decimal system operates. At this juncture, always add from right to left, 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". Here are two examples followed by 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 before solving it. We have learned how to round and estimate to the tens place, and now we want to 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 a zero in the tens and units places, which are to the right of the hundreds place. It doesn't matter what numbers are present in the other place values, only the number to the immediate right of the place value, in this case the tens place. This number determines whether to stay the same or be increased by 1. I tell the students this is why we call it rounding, because the tens and units are going to be a "round" zero.

#### *Example 1*

Round 383 to the nearest hundreds place.

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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. 383 is between 300 and 400. If the student has trouble finding these numbers begin by placing your finger over the 83, so 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   383   400

Look at the number in the tens place. Is it 0 through 4? Or is it 5 through 9? Since it is an 8, it is in the latter group, which means we round up to the next number, 400. 383 rounded to the nearest hundred is 400.

#### *Example 2*

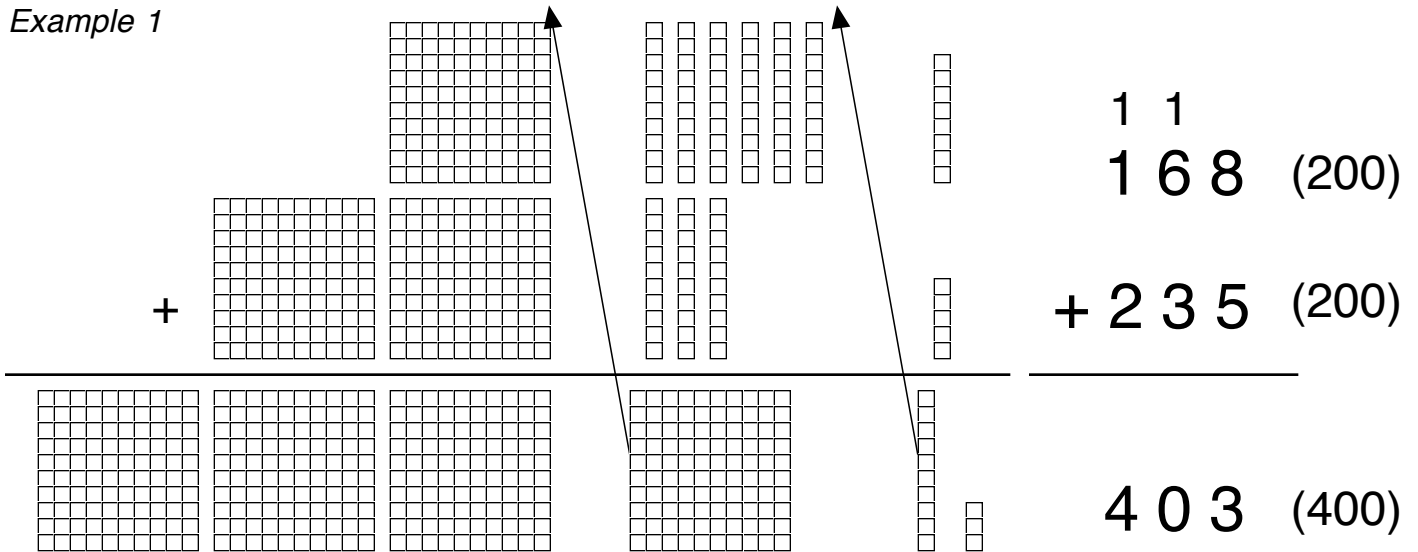
Round 547 to the nearest hundreds place.

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

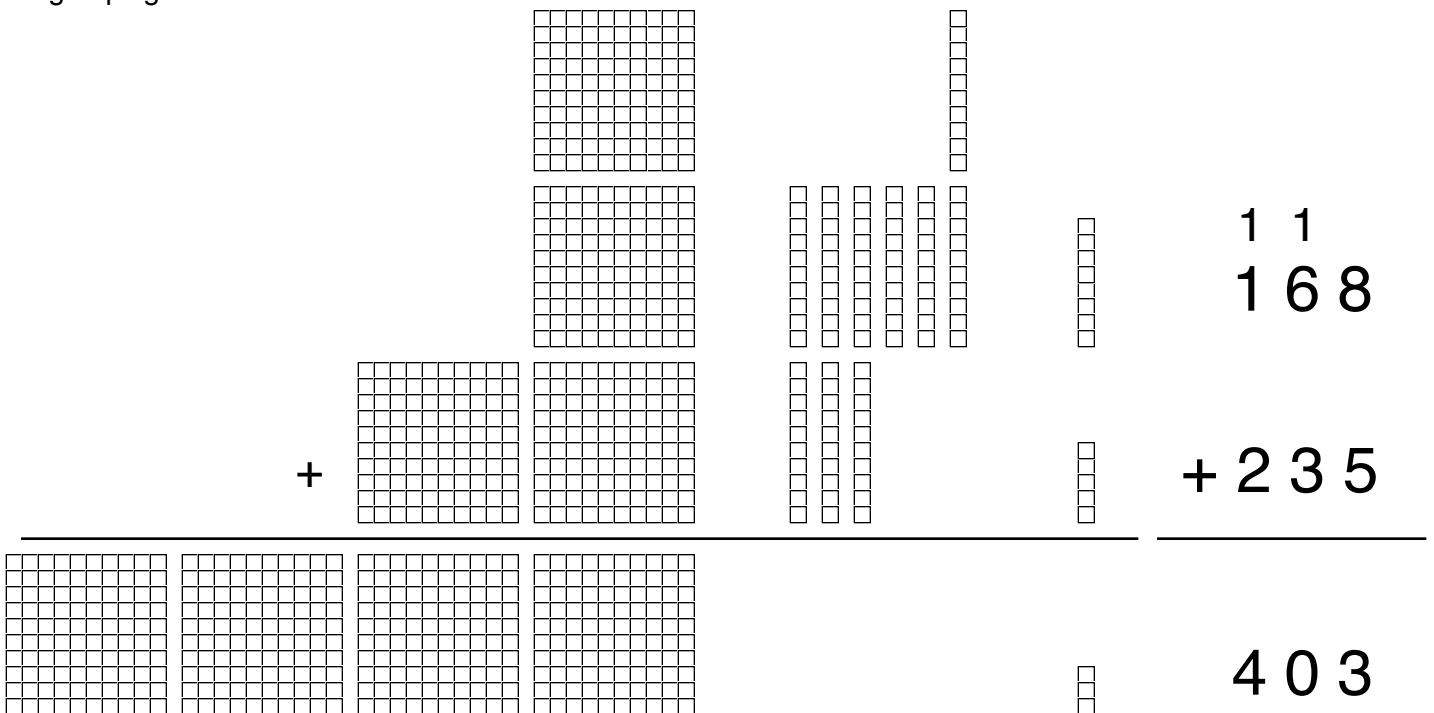
500   ← 547   600   2) We know that 4 goes to the lower number: 500.

In the two examples following, the estimates are to the right in parentheses.

Example 1



5 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, which is moved to the hundreds place as shown by the second arrow. Then adding all the hundreds gives us the answer of 4 hundred 0 tens 3 units or 403. The bottom picture is after regrouping.



Example 1

place value notation

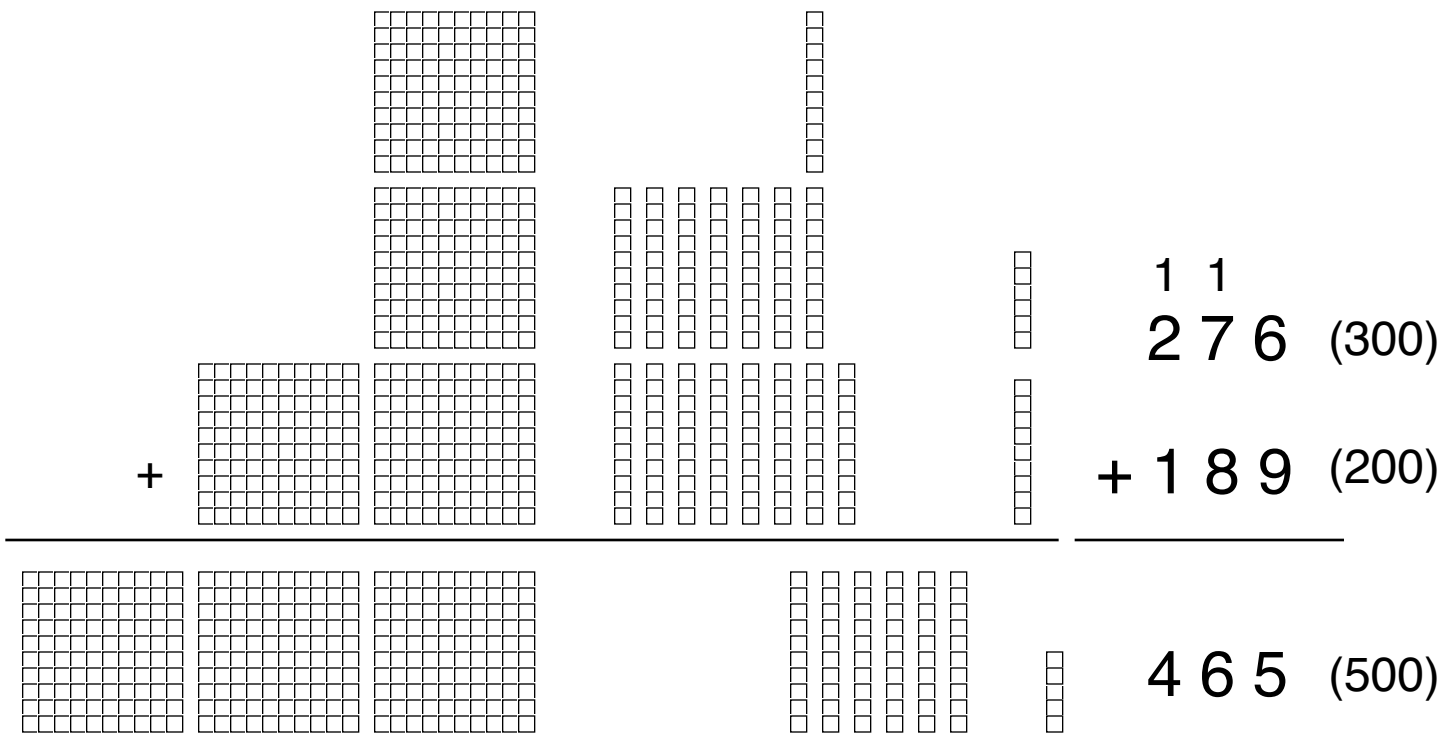
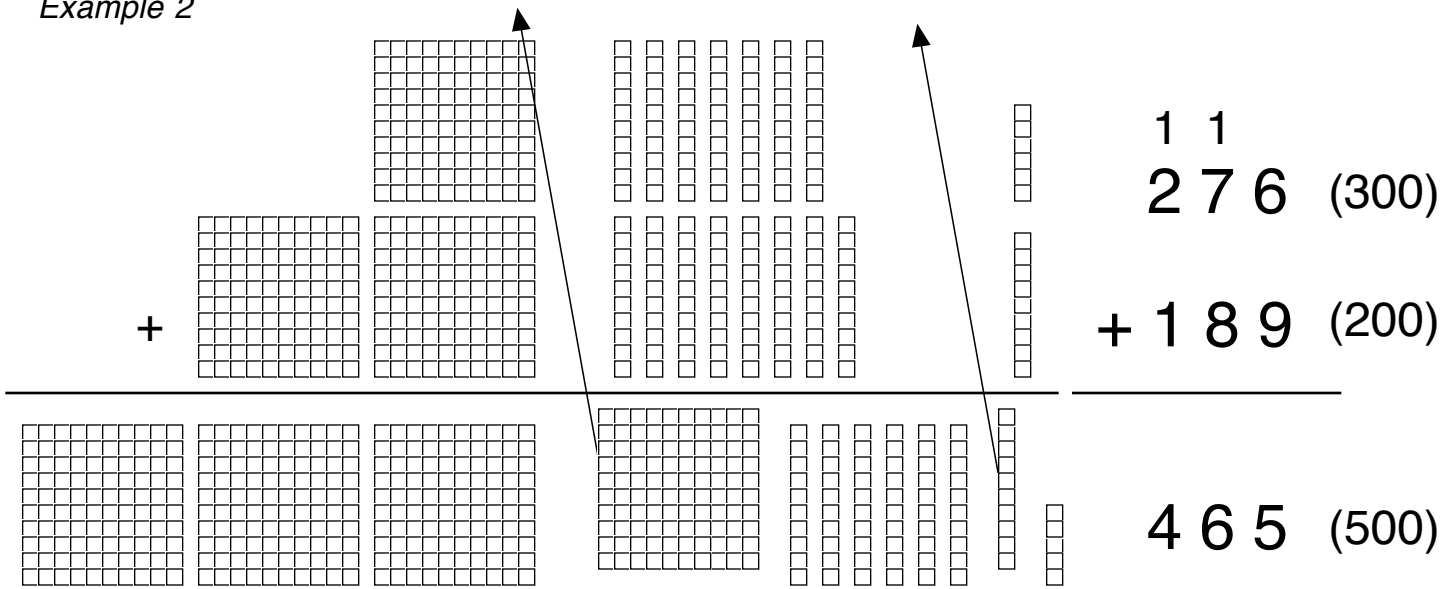
$$\begin{array}{r}
 11 \quad 100 \quad 10 \\
 168 = 100+60+8 \\
 + 235 = 200+30+5 \\
 \hline
 403 = 400 \quad +3
 \end{array}$$

regular notation

$$\begin{array}{r}
 11 \\
 168 \\
 + 235 \\
 \hline
 403
 \end{array}$$

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Example 2



Example 2

place value notation

$$\begin{array}{r}
 11 \quad 100 \quad 10 \\
 276 = 200 + 70 + 6 \\
 + 189 = 100 + 80 + 9 \\
 \hline
 465 = 400 + 60 + 5
 \end{array}$$

regular notation

$$\begin{array}{r}
 11 \\
 276 \\
 + 189 \\
 \hline
 465
 \end{array}$$

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Round to the nearest hundreds place.

1) 190 → \_\_\_\_\_

2) 206 → \_\_\_\_\_

3) 355 → \_\_\_\_\_

Round to the nearest hundred and estimate the answer. Then find the exact answer. The first one is done for you.

$$\begin{array}{r}
 1 \quad 1 \\
 364 \\
 + 297 \\
 \hline
 661
 \end{array}
 \quad
 \begin{array}{l}
 (400) \\
 + (300) \\
 \hline
 (700)
 \end{array}$$

$$\begin{array}{r}
 628 \\
 + 175 \\
 \hline
 \end{array}
 \quad
 \begin{array}{l}
 ( \quad ) \\
 + ( \quad ) \\
 \hline
 ( \quad )
 \end{array}$$

$$\begin{array}{r}
 359 \\
 + 254 \\
 \hline
 \end{array}
 \quad
 \begin{array}{l}
 ( \quad ) \\
 + ( \quad ) \\
 \hline
 ( \quad )
 \end{array}$$

$$\begin{array}{r}
 537 \\
 + 233 \\
 \hline
 \end{array}
 \quad
 \begin{array}{l}
 ( \quad ) \\
 + ( \quad ) \\
 \hline
 ( \quad )
 \end{array}$$

$$\begin{array}{r}
 168 \\
 + 452 \\
 \hline
 \end{array}
 \quad
 \begin{array}{l}
 ( \quad ) \\
 + ( \quad ) \\
 \hline
 ( \quad )
 \end{array}$$

$$\begin{array}{r}
 123 \\
 + 88 \\
 \hline
 \end{array}
 \quad
 \begin{array}{l}
 ( \quad ) \\
 + ( \quad ) \\
 \hline
 ( \quad )
 \end{array}$$

$$\begin{array}{r}
 676 \\
 + 145 \\
 \hline
 \end{array}
 \quad
 \begin{array}{l}
 ( \quad ) \\
 + ( \quad ) \\
 \hline
 ( \quad )
 \end{array}$$

$$\begin{array}{r}
 299 \\
 + 311 \\
 \hline
 \end{array}
 \quad
 \begin{array}{l}
 ( \quad ) \\
 + ( \quad ) \\
 \hline
 ( \quad )
 \end{array}$$

12) First, 124 lights burned out on the big Christmas tree downtown. Then, 176 more lights burned out. How many lights need to be replaced?

\_\_\_\_\_

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Round to the nearest hundreds place.

1)  $476 \rightarrow$  \_\_\_\_\_

2)  $515 \rightarrow$  \_\_\_\_\_

3)  $610 \rightarrow$  \_\_\_\_\_

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

$$\begin{array}{r} 4) \quad 359 \\ + 126 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 5) \quad 138 \\ + 212 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 6) \quad 157 \\ + 142 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 7) \quad 227 \\ + 39 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 8) \quad 449 \\ + 137 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 9) \quad 235 \\ + 145 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 10) \quad 109 \\ + 207 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 11) \quad 416 \\ + 329 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

- 12) On Monday Steve read 123 pages of his book. On Tuesday he read 169 pages. How many pages has he read in all?

\_\_\_\_\_

Round to the nearest hundreds place.

1)  $450 \rightarrow$  \_\_\_\_\_

2)  $103 \rightarrow$  \_\_\_\_\_

3)  $278 \rightarrow$  \_\_\_\_\_

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

$$\begin{array}{r} 4) \quad 217 \\ + 324 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 5) \quad 266 \\ + 18 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 6) \quad 134 \\ + 365 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 7) \quad 119 \\ + 207 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 8) \quad 555 \\ + 348 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 9) \quad 806 \\ + 106 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 10) \quad 119 \\ + 217 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

$$\begin{array}{r} 11) \quad 248 \\ + 252 \\ \hline \end{array} \quad \begin{array}{l} ( \quad ) \\ + ( \quad ) \\ \hline ( \quad ) \end{array}$$

- 12) On our trip to Grandmother's house, Dad drove 263 miles and Mom drove for 179 miles. How far is it to Grandmother's house? \_\_\_\_\_

Round to the nearest hundreds place.

1) 755 → \_\_\_\_\_

2) 115 → \_\_\_\_\_

Add. Regroup if needed.

$$\begin{array}{r} 3) \quad 806 \\ + 106 \\ \hline \end{array}$$

$$\begin{array}{r} 4) \quad 248 \\ + 252 \\ \hline \end{array}$$

$$\begin{array}{r} 5) \quad 337 \\ + 172 \\ \hline \end{array}$$

$$\begin{array}{r} 6) \quad 54 \\ + 28 \\ \hline \end{array}$$

$$\begin{array}{r} 7) \quad 53 \\ + 37 \\ \hline \end{array}$$

$$\begin{array}{r} 8) \quad 18 \\ + 29 \\ \hline \end{array}$$

Review your subtraction facts. These problems review subtracting 0, 1, and 2.

$$\begin{array}{r} 9) \quad 1 \\ - 1 \\ \hline \end{array}$$

$$\begin{array}{r} 10) \quad 10 \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 11) \quad 8 \\ - 1 \\ \hline \end{array}$$

$$\begin{array}{r} 12) \quad 3 \\ - 0 \\ \hline \end{array}$$

$$\begin{array}{r} 13) \quad 4 \\ - 3 \\ \hline \end{array}$$

$$\begin{array}{r} 14) \quad 6 \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 15) \quad 5 \\ - 4 \\ \hline \end{array}$$

$$\begin{array}{r} 16) \quad 8 \\ - 2 \\ \hline \end{array}$$

Skip count by two and write the numbers.

17) \_\_\_\_\_, 4, \_\_\_\_\_, \_\_\_\_\_, 10, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

18) Andrew has five dollars and twenty-six cents. Write that amount with a decimal point and dollar sign. \_\_\_\_\_

19) We traveled 55 miles last week and 78 miles this week. How many miles did we travel the last two weeks? \_\_\_\_\_

20) Jim had 145 dollars in his savings. He got 56 dollars for his birthday. How much money does Jim have now? \_\_\_\_\_

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Round to the nearest hundreds place.

1)  $361 \rightarrow$  \_\_\_\_\_

2)  $209 \rightarrow$  \_\_\_\_\_

Add. Regroup if needed.

$$\begin{array}{r} 3) \quad 235 \\ + 365 \\ \hline \end{array}$$

$$\begin{array}{r} 4) \quad 300 \\ + 409 \\ \hline \end{array}$$

$$\begin{array}{r} 5) \quad 249 \\ + 132 \\ \hline \end{array}$$

$$\begin{array}{r} 6) \quad 28 \\ + 38 \\ \hline \end{array}$$

$$\begin{array}{r} 7) \quad 65 \\ + 35 \\ \hline \end{array}$$

$$\begin{array}{r} 8) \quad 58 \\ + 42 \\ \hline \end{array}$$

Review your subtraction facts. These problems review subtracting 0, 1, and 2.

$$\begin{array}{r} 9) \quad 4 \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 10) \quad 7 \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 11) \quad 3 \\ - 1 \\ \hline \end{array}$$

$$\begin{array}{r} 12) \quad 11 \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 13) \quad 6 \\ - 5 \\ \hline \end{array}$$

$$\begin{array}{r} 14) \quad 8 \\ - 0 \\ \hline \end{array}$$

$$\begin{array}{r} 15) \quad 10 \\ - 9 \\ \hline \end{array}$$

$$\begin{array}{r} 16) \quad 9 \\ - 2 \\ \hline \end{array}$$

Skip count by five and write the numbers.

17) \_\_\_\_\_, \_\_\_\_\_, 15, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

18) A tree grew 17 inches one year and 9 inches the next year. How much did it grow during those two years? \_\_\_\_\_

19) Captain Cook spotted 138 penguins in the water and 256 on the shore. How many penguins were spotted by Captain Cook? \_\_\_\_\_

20) Mom has 5 eggs. Two of the eggs are cracked. How many are not cracked? (Watch for word problems that review subtraction.) \_\_\_\_\_





*Round to the nearest hundreds place.*

1) 126 → \_\_\_\_\_

2) 314 → \_\_\_\_\_

3) 509 → \_\_\_\_\_

*Add. Regroup if needed.*

$$\begin{array}{r} 4) \quad 132 \\ + 418 \\ \hline \end{array}$$

$$\begin{array}{r} 5) \quad 679 \\ + 276 \\ \hline \end{array}$$

$$\begin{array}{r} 6) \quad 520 \\ + 188 \\ \hline \end{array}$$

$$\begin{array}{r} 7) \quad 87 \\ + 28 \\ \hline \end{array}$$

$$\begin{array}{r} 8) \quad 45 \\ + 42 \\ \hline \end{array}$$

$$\begin{array}{r} 9) \quad 39 \\ + 15 \\ \hline \end{array}$$

*Review your subtraction facts.*

$$\begin{array}{r} 10) \quad 7 \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 11) \quad 5 \\ - 1 \\ \hline \end{array}$$

$$\begin{array}{r} 12) \quad 8 \\ - 0 \\ \hline \end{array}$$

$$\begin{array}{r} 13) \quad 11 \\ - 9 \\ \hline \end{array}$$

$$\begin{array}{r} 14) \quad 5 \\ - 3 \\ \hline \end{array}$$

$$\begin{array}{r} 15) \quad 10 \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 16) \quad 6 \\ - 1 \\ \hline \end{array}$$

$$\begin{array}{r} 17) \quad 7 \\ - 5 \\ \hline \end{array}$$

*Skip count by five and write the numbers.*

18) \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, 25, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

19) Cameron had 476 stamps in his collection at the beginning of the year. Since then he has collected 125 more. How many stamps does he have now? Estimate first, then solve. \_\_\_\_\_

20) Sara is six years old. How many years is it until she is ten? \_\_\_\_\_

# Sample Teacher Manual Page

- 11A**
- 1) 200
  - 2) 200
  - 3) 400
  - 4) done
  - 5) 
$$\begin{array}{r} (600) \\ + (200) \\ \hline (800) \end{array}$$

$$\begin{array}{r} 11 \\ 628 \\ + 175 \\ \hline 803 \end{array}$$
  - 6) 
$$\begin{array}{r} (400) \\ + (300) \\ \hline (700) \end{array}$$

$$\begin{array}{r} 11 \\ 359 \\ + 254 \\ \hline 613 \end{array}$$
  - 7) 
$$\begin{array}{r} (500) \\ + (200) \\ \hline (700) \end{array}$$

$$\begin{array}{r} 1 \\ 537 \\ + 233 \\ \hline 770 \end{array}$$
  - 8) 
$$\begin{array}{r} (200) \\ + (500) \\ \hline (700) \end{array}$$

$$\begin{array}{r} 11 \\ 168 \\ + 452 \\ \hline 620 \end{array}$$
  - 9) 
$$\begin{array}{r} (100) \\ + (100) \\ \hline (200) \end{array}$$

$$\begin{array}{r} 11 \\ 123 \\ + 88 \\ \hline 211 \end{array}$$
  - 10) 
$$\begin{array}{r} (700) \\ + (100) \\ \hline (800) \end{array}$$

$$\begin{array}{r} 11 \\ 676 \\ + 145 \\ \hline 821 \end{array}$$
  - 11) 
$$\begin{array}{r} (300) \\ + (300) \\ \hline (600) \end{array}$$

$$\begin{array}{r} 11 \\ 299 \\ + 311 \\ \hline 610 \end{array}$$
  - 12)  $124 + 176 = 300$
- 11B**
- 1) 500
  - 2) 500
  - 3) 600
  - 4) 
$$\begin{array}{r} (400) \\ + (100) \\ \hline (500) \end{array}$$

$$\begin{array}{r} 1 \\ 359 \\ + 126 \\ \hline 485 \end{array}$$
  - 5) 
$$\begin{array}{r} (100) \\ + (200) \\ \hline (300) \end{array}$$

$$\begin{array}{r} 1 \\ 138 \\ + 212 \\ \hline 350 \end{array}$$
  - 6) 
$$\begin{array}{r} (200) \\ + (100) \\ \hline (300) \end{array}$$

$$\begin{array}{r} 157 \\ + 142 \\ \hline 299 \end{array}$$
  - 7) 
$$\begin{array}{r} (200) \\ + (000) \\ \hline (200) \end{array}$$

$$\begin{array}{r} 1 \\ 227 \\ + 39 \\ \hline 266 \end{array}$$
  - 8) 
$$\begin{array}{r} (400) \\ + (100) \\ \hline (500) \end{array}$$

$$\begin{array}{r} 1 \\ 449 \\ + 137 \\ \hline 586 \end{array}$$
  - 9) 
$$\begin{array}{r} (200) \\ + (100) \\ \hline (300) \end{array}$$

$$\begin{array}{r} 1 \\ 235 \\ + 145 \\ \hline 380 \end{array}$$
  - 10) 
$$\begin{array}{r} (100) \\ + (200) \\ \hline (300) \end{array}$$

$$\begin{array}{r} 1 \\ 109 \\ + 207 \\ \hline 316 \end{array}$$
  - 11) 
$$\begin{array}{r} (400) \\ + (300) \\ \hline (700) \end{array}$$

$$\begin{array}{r} 1 \\ 416 \\ + 329 \\ \hline 745 \end{array}$$
  - 12)  $123 + 169 = 292$
- 11C**
- 1) 500
  - 2) 100
  - 3) 300
  - 4) 
$$\begin{array}{r} (200) \\ + (300) \\ \hline (500) \end{array}$$

$$\begin{array}{r} 1 \\ 217 \\ + 324 \\ \hline 541 \end{array}$$
  - 5) 
$$\begin{array}{r} (300) \\ + (000) \\ \hline (300) \end{array}$$

$$\begin{array}{r} 1 \\ 266 \\ + 18 \\ \hline 284 \end{array}$$
  - 6) 
$$\begin{array}{r} (100) \\ + (400) \\ \hline (500) \end{array}$$

$$\begin{array}{r} 134 \\ + 365 \\ \hline 499 \end{array}$$
  - 7) 
$$\begin{array}{r} (100) \\ + (200) \\ \hline (300) \end{array}$$

$$\begin{array}{r} 1 \\ 119 \\ + 207 \\ \hline 326 \end{array}$$
  - 8) 
$$\begin{array}{r} (600) \\ + (300) \\ \hline (900) \end{array}$$

$$\begin{array}{r} 11 \\ 555 \\ + 348 \\ \hline 903 \end{array}$$
  - 9) 
$$\begin{array}{r} (800) \\ + (100) \\ \hline (900) \end{array}$$

$$\begin{array}{r} 1 \\ 806 \\ + 106 \\ \hline 912 \end{array}$$
  - 10) 
$$\begin{array}{r} (100) \\ + (200) \\ \hline (300) \end{array}$$

$$\begin{array}{r} 1 \\ 119 \\ + 217 \\ \hline 336 \end{array}$$
  - 11) 
$$\begin{array}{r} (200) \\ + (300) \\ \hline (500) \end{array}$$

$$\begin{array}{r} 11 \\ 248 \\ + 252 \\ \hline 500 \end{array}$$
  - 12)  $263 + 179 = 442$  miles
- 11D**
- 1) 800
  - 2) 100
  - 3) 912
  - 4) 500
  - 5) 509
  - 6) 82
  - 7) 90
  - 8) 47
  - 9) 0
  - 10) 8
  - 11) 7
  - 12) 3
  - 13) 1
  - 14) 4
  - 15) 1
  - 16) 6
  - 17) 2, 4, 6, 8, 10, 12, 14, 16, 18, 20
  - 18) \$5.26
  - 19)  $55 + 78 = 133$
  - 20)  $\$145 + \$56 = \$201$