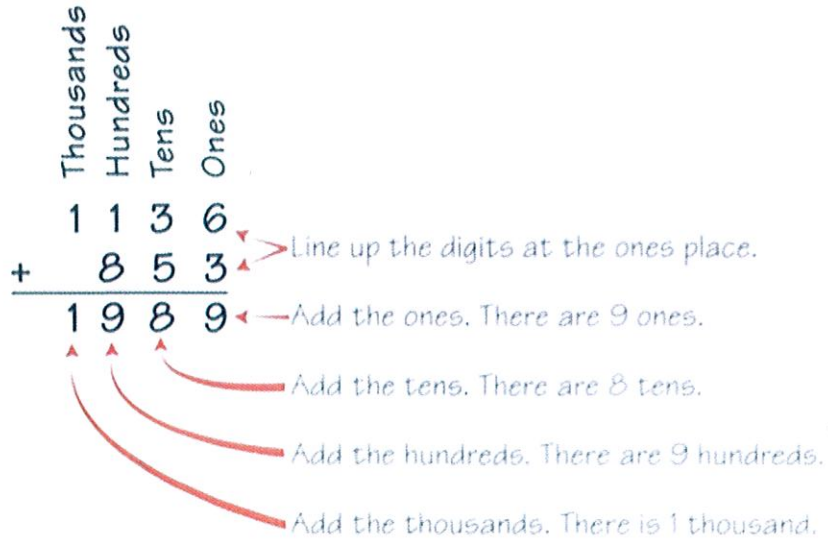
Sixth Grade Summer Review Sheet

Adding Whole Numbers

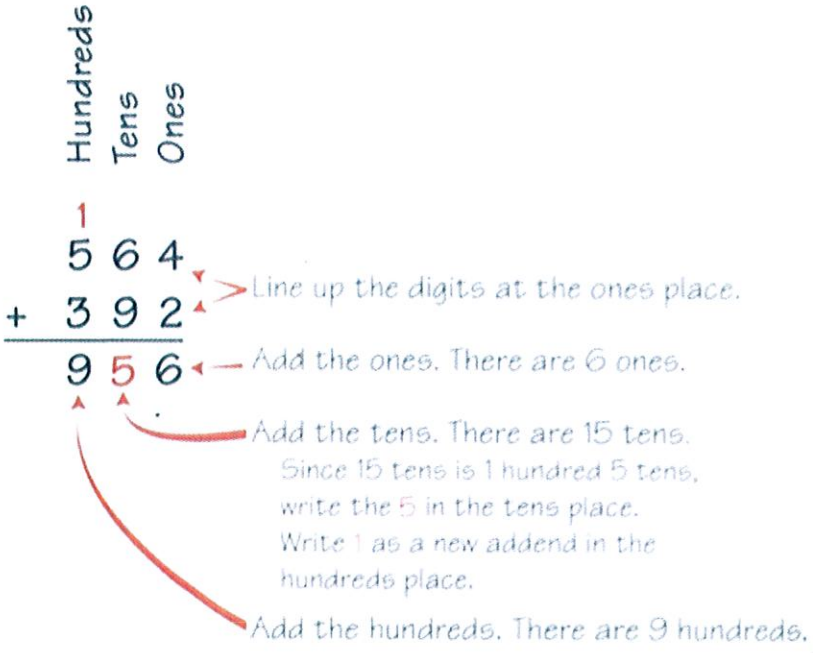
Step 1: Line up the digits by place value.

Step 2: Add. Don't forget to regroup, if necessary.

Example 1:



Example 2:

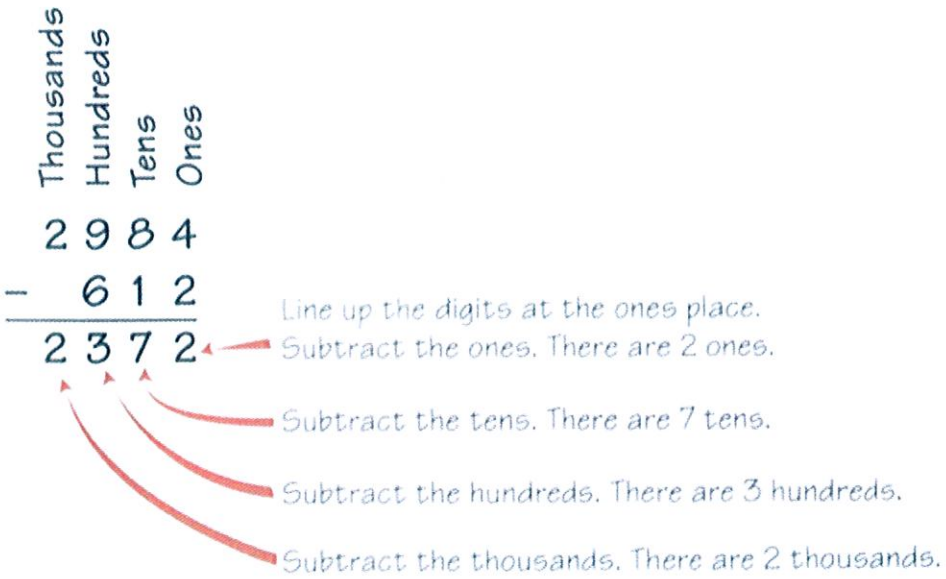


Subtracting Whole Numbers

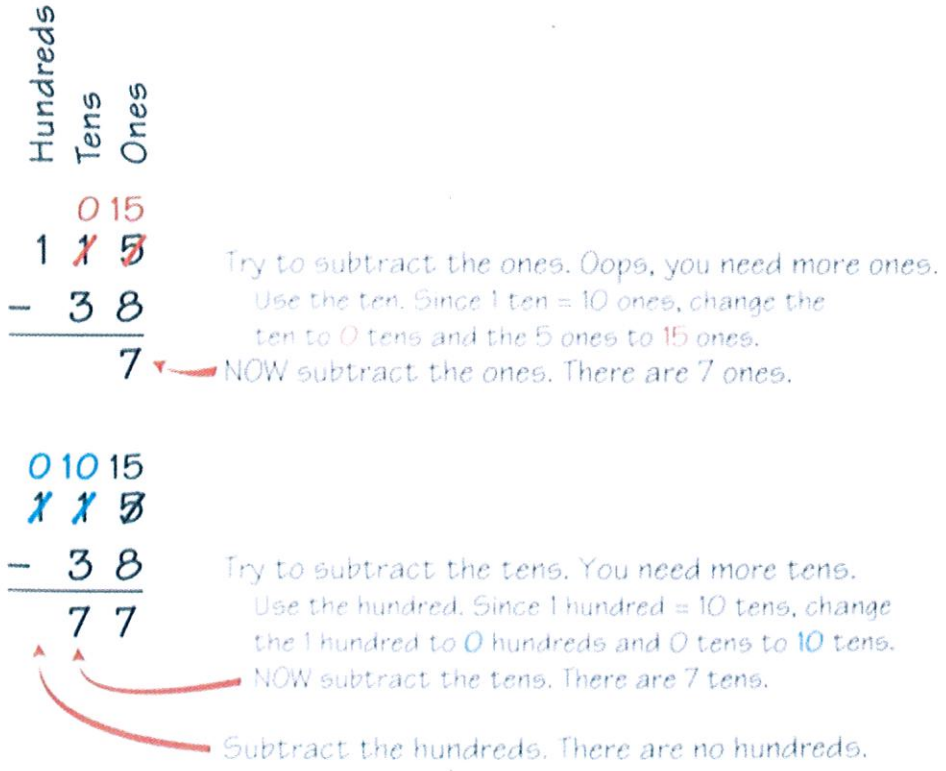
Step 1: Line up the digits by place value.

Step 2: Subtract. Don't forget to borrow, if necessary.

Example 1:



Example 2:



Multiplying Whole Numbers

Multiplying by a 1-Digit Number

If you know how to multiply 1-digit numbers such as 7×5, you can also multiply larger numbers such as 7×582. That's because multiplying multi-digit numbers is done one digit at a time. Each product is called a **partial product**. First, multiply the value of each digit from one factor by the value of each digit from the other factor. Then, add up the partial products.

Method 1: Multiplying by listing all the partial products

Example:

Find 582×7.

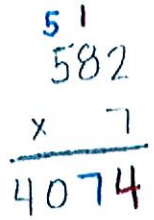
$$\begin{array}{r} 582 \\ \times \quad 7 \\ \hline \end{array}$$

14	← Multiply the ones.	**$7 \times$ 2 ones = 14 ones**
560	← Multiply the tens.	**$7 \times$ 8 tens = 56 tens = 560**
+3500	← Multiply the hundreds	**$7 \times$ 5 hundreds = 35 hundreds = 3500**
4074	← Add the partial products	

Method 2: You can also multiply without listing the partial products.

Example:

Find 582×7.



Multiply the ones. Since 14 ones is 1 ten and 4 ones, write 4 in the ones place. Write 1 above the tens so you don't forget it.

Multiply the tens. Since 56 tens is 5 hundreds and 6 tens, add the 6 tens to the 1 ten you already have. Write 7 in the tens place. Write 5 above the hundreds so you don't forget it.

Multiply the hundreds. Since 35 hundreds is 3 thousands and 5 hundreds, add the 5 hundreds to the 5 hundreds you already have. Write 0 in the hundreds place. Write 4 in the thousands place.

Multiplying by a 2-Digit Number

Example:

Multiply 24 × 674.

Method 1: Multiplying by listing all the partial products

Hundreds	Tens	Ones	
	6	7 4	
×	2	4	
		1 6	Multiply by the ones.
	2 8	0	4 × 4 = 16
2 4	0	0	4 × 70 = 280
			4 × 600 = 2400
	8	0	Multiply by the tens.
1 4	0	0	20 × 4 = 80
1 2	0	0 0	20 × 70 = 1400
			20 × 600 = 12,000
1 6,	1	7 6	Add the partial products.

Method 2: You can also multiply without listing the partial products.

Hundreds	Tens	Ones	
	2	1	Multiply by the ones: 4 × 674 = ?
	6	7 4	4 × 4 = 16 → 6 ones with 1 ten to regroup
×		2 4	4 × 70 = 280 → 8 tens + 1 ten with 2 hundreds to regroup
	2 6	9 6	4 × 600 = 2400 → 24 hundreds + 2 hundreds

Hundreds	Tens	Ones	
	1		
	2	1	Multiply by the tens: 20 × 674 = ?
	6	7 4	20 × 4 = 80 → 8 tens and 0 ones
×		2 4	20 × 70 = 1400 → 14 hundreds with 1 thousand to regroup
	2 6	9 6	20 × 600 = 12,000 → 12 thousands + 1 thousand
1 3	4	8 0	
1 6,	1	7 6	Add the partial products.

Dividing Whole Numbers

Remember, there are three symbols for division: ÷, $\overline{)}$, and the fraction bar.

Example:

272 divided by 8 can be written as $272 \div 8$, $8\overline{)272}$, or $\frac{272}{8}$.

The basic steps in division are:

Step 1: *Multiply to estimate.* Look at the dividend (the number being divided; in the example above, 272 is the dividend). Find the first place that the divisor (the number doing the dividing; in the example above, 8 is the divisor). Use mental multiplication to get close to the dividend without going over.

Step 2: *Subtract and compare.* Subtract the product you found in **Step 1** from the dividend to see what remains to be divided.

Step 3: *Repeat **Steps 1 and 2*** until there's not enough or nothing left to divide.

Example:

1. Find 272 ÷ 8.

```
  34
8)272
 -240
   32
  -32
    0
```

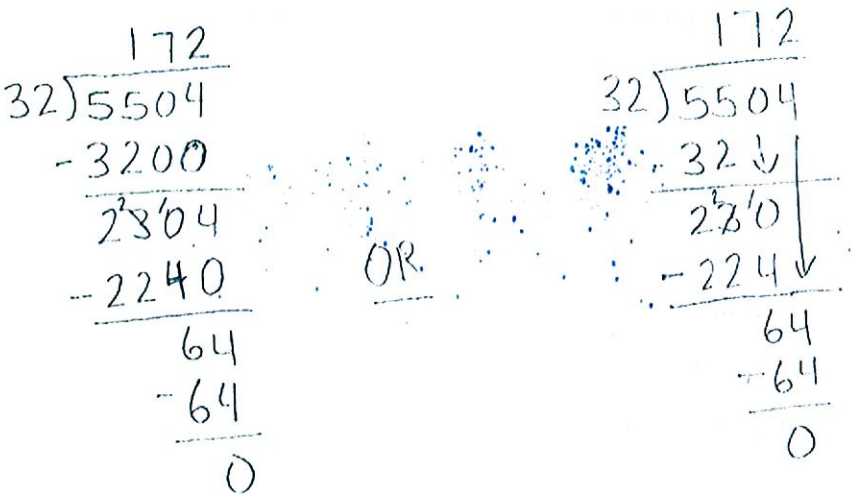
Remember: 272 = 2 hundreds(200) + 7 tens (70) + 2 ones(2).

Start with the hundreds. 200 ÷ 8 = ?. *Multiply to estimate.*
8 × 100 = 800. That's too much. So, don't write anything in the hundreds place.

Divide the tens. 270 ÷ 8 = ?. *Multiply to estimate.*
8 × 3 tens = 24 tens = 240
8 × ? tens = 270
8 × 4 tens = 32 tens = 320
So, the quotient is between 30(3 tens) and 40(4 tens). Write a 3 in the tens place and 240 under the dividend. *Subtract and compare.* 272 - 240 = 32. Since 32 > 8, we can keep dividing.

Divide the ones. *Multiply to estimate.* In this case, there is no need to estimate. We know that 8 × 4 = 32. Write a 4 in the ones place and place a 32 under the dividend.
Subtract and compare. 32 - 32 = 0. We can't divide any more, so we are done.

2. 5,504 ÷ 32 =


172
32)5504
-3200
2304
-2240
64
-64
0
OR
172
32)5504
-32
230
-224
64
-64
0