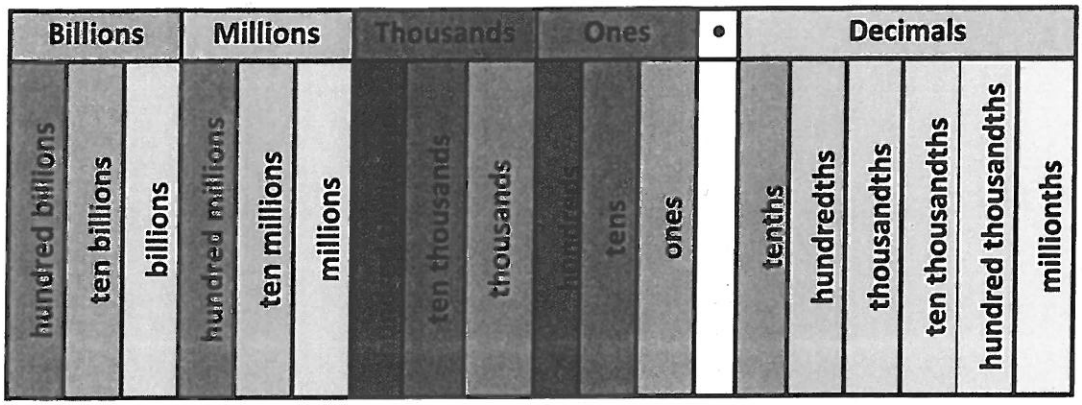
1.3 Expanded Notation

The place value of a digit can be used to write a number in standard form.



Examples: 4678 = 4000 + 600 + 70 + 8

$85{,}003.72 = 80{,}000 + 5{,}000 + 3 + \frac{7}{10} + \frac{2}{100}$

The following chart depicts both *standard form* and *expanded notation:*

STANDARD FORM	230,405,008,710
WORDS	Two hundred thirty billion, four hundred five million, eight thousand, seven hundred ten
EXPANDED NOTATION	200,000,000,000 + 30,000,000,000 + 400,000,000 + 5,000,000 + 8,000 + 700 +10

Write each number in expanded notation:

a. 4,286

b. 56,008.25

c. 4,801,083

d. 67,900,432

e. 45,000,025,001

Write standard form for the following:

f. 400,000 + 2,000 + 80 + 2

g. $40{,}000 + 600 + \frac{2}{10} + \frac{5}{1000}$

h. $800 + 5 + \frac{3}{100}$

i. $8{,}000{,}000 + 40{,}000 + 200 + 6 + \frac{7}{100} + \frac{2}{1000}$

Assignment 1.3 Name:_____

Write each number in expanded notation:

1. 425

2. 8,670

3. 57,004.86

4. 890,005,060,000

5. 23,003,040,700.5

For each expanded notation, write the number represented in standard form:

6. 6,000,000,000 + 300,000,000 + 40,000,000 + 2,000,000

7. 700,000,000 + 10,000,000 + 3,000,000 + 4,000 + 100 + 10 + $\frac{2}{10}$

8. 10,000,000,000 +2,000,000,000 + 100,000,000 + 500,000 + 60,000 + 2,000 + $\frac{8}{1000}$

Supplemental Exercises

Unit 1
Section 1.3

Write each number in expanded notation:

1. 943

2. 7,021

3. 32,015,499

4. 1,876,205,040

5. 853,006,033,005

6. 0.15

7. 9,073.02

8. 11,045,903.74

9. 7,001,001,005.045

10. 0.0708

For each expanded notation, write the number represented in standard form:

11. $600 + 9$

12. $5{,}000 + 30 + 1$

13. $40{,}000 + 200 + 8$

14. $30{,}000{,}000 + 200{,}000 + 7{,}000 + 80 + 4$

15. $5{,}000{,}000{,}000 + 300{,}000{,}000 + 9{,}000{,}000 + 60{,}000 + 500 + 40 + 3$

16. $\frac{3}{10} + \frac{7}{100} + \frac{1}{10{,}000}$

17. $8{,}000 + 70 + \frac{3}{1{,}000}$

18. $500{,}000 + 6{,}000 + 300 + 4 + \frac{1}{100} + \frac{7}{1{,}000}$

19. $\frac{3}{10{,}000} + \frac{9}{100{,}000}$

20. $500{,}000{,}000{,}000 + 90{,}000{,}000 + 100{,}000 + 4{,}000 + 9 + \frac{2}{10} + \frac{3}{1{,}000}$