

LEVEL TWELVE

THOUSANDS AND LARGE NUMBERS

Developmental Mathematics

L. George Saad, Ph. D.
Professor Emeritus
Long Island University

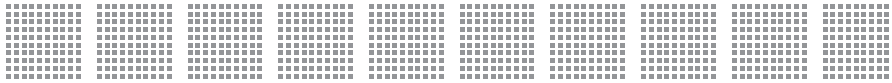
CONCEPTS & SKILLS
12

© Copyright 1993, by L. George Saad, all rights reserved. Manufactured in the United States of America. This publication is protected by copyright. No part of this work herein may be reproduced, transmitted, stored or used in any form, or by any means, graphic, electronic, or mechanical. Including but not limited to photocopying, recording, scanning, digitizing, taping, web distribution, information networks, or information storage and retrieval systems. To obtain permissions to use material from this work please submit a written request to copyright@developmentalmathematics.store.

1**THOUSANDS**

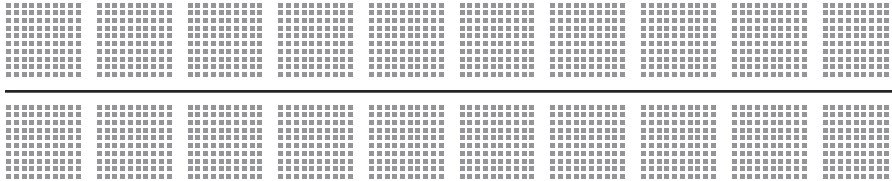
10 hundreds make 1 thousand

a.



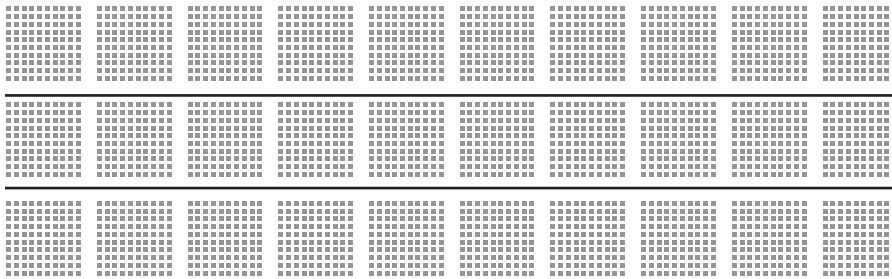
1 thousand
We write: 1,000

b.



2 thousands
We write: 2,000

c.



3 thousands
We write: _____

How much money is each amount?

- a. 10 one-hundred dollar bills? _____
- b. 30 one-hundred dollar bills? _____
- c. 80 one-hundred dollar bills? _____
- d. 100 one-hundred dollar bills? _____
- e. 400 one-hundred dollar bills? _____
- f. 100 ten-dollar bills? _____
- g. 700 ten-dollar bills? _____
- h. 800 ten-dollar bills? _____

APPLICATIONS

What is the number?

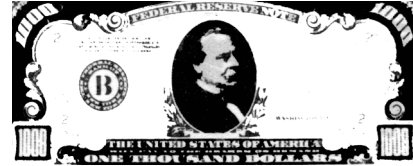
1. You have 8 boxes, with 1000 stamps in each box.
How many stamps do you have? _____
2. A farmer has 19 piles, with 1,000 oranges in each pile.
How many oranges does he have? _____
3. A theatre which has 1,000 seats
was full for a whole week.
How many persons attended? _____
4. 25 students won scholarships of \$1,000 each.
How much was the total amount? _____
5. John's monthly take-home pay check is \$1,000.
How much does he receive in a year? _____
6. A restaurant serves 1,000 customers every day.
How many customers are served during July? _____
7. On the average, every day 1,000 cars go through a toll booth.
In all, how many cars go through the booth in a year? _____
8. On the average, 1,000 persons use a library every week.
In all, how many persons use the library in a year?
(The year is 52 weeks). _____
9. A bank teller has 17 packages of money bills:
\$1,000 each
How much money does she have? _____
10. An oil company has 28 trucks with 1000-gallon tanks.
In all, how much oil can these trucks carry? _____

Write the number:

- a. What number is the same as 10 hundreds? _____
- b. What number is the same as 60 hundreds? _____
- c. What number is the same as 80 hundreds? _____
- d. What number is the same as 100 hundreds? _____
- e. What number is the same as 400 hundreds? _____
- f. What number is the same as 900 hundreds? _____

LARGE MONEY BILLS

- Do you know that there is a \$1,000 bill?
Printed on it is the portrait of Grover Cleveland, who was elected twice to the presidency: 1885-1889 and 1893-1897.
- Also, there is a \$10,000 bill. Printed on it is the portrait of Salmon Chase, who was Secretary of the Treasury in President Abraham Lincoln's cabinet.
- Also, there is a \$100,000 bill. Printed on it is the portrait of Woodrow Wilson, who was the president of the United States of America for two terms: 1913-1917 and 1917-1921.



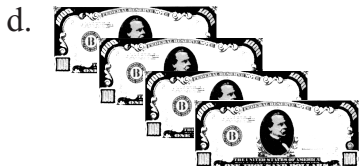
APPLICATIONS

How much money is pictured in the box?













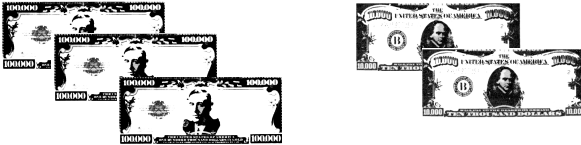
APPLICATIONS

How much money is pictured below?

a.



b.



c.



How much money is each amount?

a. 9 one-hundred-thousand dollar bills.

b. 15 one-thousand dollar bills.

c. 6 ten-thousand dollar bills, and
4 one-thousand dollar bills.

d. 3 one-hundred-thousand dollar bills,
6 ten thousand-dollar bills, and
5 one-thousand-dollar bills.

e. 8 one-hundred-thousand dollar bills,
and 7 one-thousand dollar bills.

f. 9 one-hundred-thousand-dollar bills,
and 4 ten-thousand dollar bills.

g. 10 ten-thousand dollar bills.

h. 60 ten-thousand dollar bills

2

ADDING

Example 1.

- a. Tom has \$5,000.

Dan has \$3,000 more than Tom.

- How much does Dan have? _____
- How much do they have altogether? _____

- b. In a village there are 4,000 men,
-
- 3,000 women, and 2,000 children.

How many persons live in this village? _____

- c. In a school district, there are 4,000 students
-
- in the elementary schools, 2,000 in
-
- the junior high school, and 2,000 students
-
- in the high school.

How many students are in the district? _____

- d. In a college, there are 5,000 women.
-
- There are 2,000 more men than women.

- How many men are there? _____
- How many students are in the college? _____

EXERCISES

Write the answer:

- a. $4,000 + 3,000 =$ _____
- c. $1,000 + 4,000 =$ _____
- e. $4,000 + 5,000 =$ _____
- g. $2,000 + 8,000 =$ _____
- i. $4,000 + 6,000 =$ _____
- k. $6,000 + 5,000 =$ _____
- m. $4,000 + 9,000 =$ _____
- o. $30,000 + 40,000 =$ _____
- q. $20,000 + 40,000 =$ _____
- s. $500,000 + 200,000 =$ _____
- u. $300,000 + 100,000 =$ _____

- b. $2,000 + 7,000 =$ _____
- d. $5,000 + 1,000 =$ _____
- f. $3,000 + 2,000 =$ _____
- h. $9,000 + 1,000 =$ _____
- j. $5,000 + 5,000 =$ _____
- l. $9,000 + 9,000 =$ _____
- n. $8,000 + 7,000 =$ _____
- p. $50,000 + 40,000 =$ _____
- r. $80,000 + 20,000 =$ _____
- t. $300,000 + 300,000 =$ _____
- v. $100,000 + 600,000 =$ _____

EXERCISES

Add:

- | | |
|---------------------------------------|-------------------------------|
| a. $70,000 + 8,000 =$ _____ | b. $30,000 + 9,000 =$ _____ |
| c. $21,000 + 5,000 =$ _____ | d. $31,000 + 4,000 =$ _____ |
| e. $25,000 + 5,000 =$ _____ | f. $14,000 + 6,000 =$ _____ |
| g. $43,000 + 8,000 =$ _____ | h. $35,000 + 9,000 =$ _____ |
| i. $27,000 + 5,000 =$ _____ | j. $56,000 + 6,000 =$ _____ |
| k. $31,000 + 64,000 =$ _____ | l. $48,000 + 30,000 =$ _____ |
| m. $15,000 + 32,000 =$ _____ | n. $30,000 + 25,000 =$ _____ |
| o. $500,000 + 40,000 =$ _____ | p. $700,000 + 30,000 =$ _____ |
| q. $800,000 + 20,000 =$ _____ | r. $400,000 + 40,000 =$ _____ |
| s. $400,000 + 7,000 =$ _____ | t. $900,000 + 9,000 =$ _____ |
| u. $200,000 + 1,000 =$ _____ | v. $700,000 + 3,000 =$ _____ |
| w. $700,000 + 20,000 + 5,000 =$ _____ | |
| x. $200,000 + 30,000 + 6,000 =$ _____ | |
| y. $800,000 + 10,000 + 4,000 =$ _____ | |
| z. $100,000 + 60,000 + 6,000 =$ _____ | |

APPLICATIONS

- A family bought a house. They paid \$10,000 and the bank paid \$50,000.
How much did the house cost? _____
- The population of 3 villages is 9,000, 3,000, and 6,000. How many persons live in the 3 villages altogether? _____
- A family bought a house for \$85,000.
They sold the house with a profit of \$7,000.
For how much did they sell the house? _____
- On Monday, a store sold goods for \$15,000.
The sales rose \$3,000 daily for the next three days.
How much were the sales on Wednesday? _____
- There were 92,000 books in the library.
8,000 new books were added.
How many books are in the library now? _____

Example 2.

You want to add: $231,000 + 142,000 + 24,000$

Discussion:

You may use boxes as shown to the right.

- Add the ones of thousands: 7 Th's
- Add the tens of thousands: 9 tens of Th's
- Add the hundreds of thousands: 3 hundreds of Th's

THOUSANDS		
100's	10's	1's
2	3	1
1	4	2
	2	4

Example 3.

You want to add: $236,000 + 158,000 + 67,000$

Discussion:

You may use boxes as shown to the right.

- Add the ones of thousands: 21 Th's
21 Th's = 2 tens of Th's + 1 Th's
Write 1 in the ones of Th's box, and remember that you have 2 tens of Th's to add to the tens of thousands.
- Add the tens of thousands: 16 tens of Th's
16 tens of Th's = 1 hundred of Th's + 6 tens of Th's
Write 6 in the tens of Th's box. Remember that you have 1 hundred of Th's to add to the hundreds of Th's.
- Add the hundreds of thousands: 4 hundreds of Th's
Write 4 in the hundreds of thousands box.

THOUSANDS		
100's	10's	1's
2	3	6
1	5	8
	6	7

You may, of course, do without the boxes.

Do the following additions:

a. $\begin{array}{r} 232,000 \\ 41,000 \\ + 106,000 \\ \hline \end{array}$	b. $\begin{array}{r} 50,000 \\ 312,000 \\ + 127,000 \\ \hline \end{array}$	c. $\begin{array}{r} 291,000 \\ 38,000 \\ + 253,000 \\ \hline \end{array}$	d. $\begin{array}{r} 383,000 \\ 139,000 \\ + 49,000 \\ \hline \end{array}$
e. $\begin{array}{r} 139,000 \\ 378,000 \\ + 94,000 \\ \hline \end{array}$	f. $\begin{array}{r} 375,000 \\ 276,000 \\ + 24,000 \\ \hline \end{array}$	g. $\begin{array}{r} 789,000 \\ 81,000 \\ + 40,000 \\ \hline \end{array}$	h. $\begin{array}{r} 197,000 \\ 81,000 \\ + 342,000 \\ \hline \end{array}$
i. $\begin{array}{r} 48,000 \\ 118,000 \\ + 35,000 \\ \hline \end{array}$	j. $\begin{array}{r} 19,000 \\ 147,000 \\ + 238,000 \\ \hline \end{array}$	k. $\begin{array}{r} 39,000 \\ 251,000 \\ + 310,000 \\ \hline \end{array}$	l. $\begin{array}{r} 282,000 \\ 74,000 \\ + 144,000 \\ \hline \end{array}$

APPLICATIONS

1. Last year the profits of a company were \$293,000.
This year the profits have increased by \$89,000.
How much are the profits this year? _____

2. The population of a city is 190,000 people.
With an increase of 26,000 per year, what
will the population be after two years? _____

3. A company owns three canning machines. The daily
production of the machines is 39,000 cans,
42,000 cans, and 28,000 cans. What is the daily
production of the three machines altogether? _____

4. A textile firm produced three kinds of fabric:
 1st kind: 39,000 yards
 2nd kind: 84,000 yards
 3rd kind: 77,000 yards
How many yards did the company
produce of the three kinds? _____

5. A publishing company published a certain book
three times:
 1st time: 75,000 copies
 2nd time: 87,000 copies
 3rd time: 115,000 copies
How many copies of this book were published? _____

6. A, B, and C are three numbers.
A is 36,000, B is 19,000 more than A,
and C is 28,000 more than B.
What number is B? _____
What number is C? _____

7. $M = 39,000$
 $N = M + 81,000$
 $X = N + 25,000$
What number is N? _____
What number is X? _____

3

SUBTRACTING

Example 1.

Last year, Ted's income was \$9,000. He spent \$7,000.

How much did he save?

9,000

- 7,000

2,000

Solution:

9 Th's - 7 Th's = 2 Th's

So, $9,000 - 7,000 = 2,000$ Ted saved \$2,000.

Example 2.

The population of a village is 14,000. 8,000 are males.

How many females live in the village?

14,000

- 8,000

6,000

Solution:

The number of females = $14,000 - 8,000 = 6,000$

Example 3.

During January 1999, a bus line carries 700,000 passengers.

During February 1999, the number of passengers decreased by 200,000.

How many passengers used the bus line during February 1999?

Solution:

 $700,000 - 200,000 = 500,000$

During February 1984, 500,000 passengers used the bus line.

EXERCISES

Write the answer:

- | | |
|--|---|
| 1. a. $9,000 - 4,000 =$ _____
c. $7,000 - 3,000 =$ _____ | b. $8,000 - 2,000 =$ _____
d. $6,000 - 6,000 =$ _____ |
| 2. a. $11,000 - 2,000 =$ _____
c. $12,000 - 7,000 =$ _____
e. $10,000 - 4,000 =$ _____ | b. $14,000 - 5,000 =$ _____
d. $17,000 - 9,000 =$ _____
f. $10,000 - 1,000 =$ _____ |
| 3. a. $90,000 - 70,000 =$ _____
c. $60,000 - 40,000 =$ _____ | b. $40,000 - 30,000 =$ _____
d. $80,000 - 80,000 =$ _____ |
| 4. a. $37,000 - 5,000 =$ _____
c. $950,000 - 30,000 =$ _____ | b. $86,000 - 6,000 =$ _____
d. $840,000 - 40,000 =$ _____ |
| 5. a. $40,000 - 7,000 =$ _____
c. $31,000 - 4,000 =$ _____ | b. $90,000 - 6,000 =$ _____
d. $56,000 - 9,000 =$ _____ |

Example 4.

You want to subtract: $978,000 - 246,000$

Discussion:

You may use boxes.

- $8 \text{ Th's} - 6 \text{ Th's} = 2 \text{ Th's}$
- $7 \text{ tens of Th's} - 4 \text{ tens of Th's} = 3 \text{ tens of Th's}$
- $9 \text{ hundreds of Th's} - 2 \text{ hundreds of TH's} = \underline{\hspace{2cm}}$

The answer is

THOUSANDS		
100's	10's	1's
9	7	8
2	4	6

Example 5.

Do the subtraction to the right.

Solution:

- $11 \text{ Th's} - 7 \text{ Th's} = 4 \text{ Th's}$
- $14 \text{ tens of Th's} - 8 \text{ tens of Th's} = 6 \text{ tens of Th's}$
- $5 \text{ hundreds of Th's} - 2 \text{ hundreds of Th's} = \underline{\hspace{2cm}}$

The answer is

THOUSANDS		
100's	10's	1's
6	5	1
2	8	7

Example 6.

Do the subtraction to the right.

Solution:

- $13 \text{ Th's} - 8 \text{ Th's} = 5 \text{ Th}$
- $11 \text{ tens of Th's} - 9 \text{ tens of Th's} = 2 \text{ tens of Th's}$
- $6 \text{ hundreds of Th's} - 1 \text{ hundred of Th's} = \underline{\hspace{2cm}}$

The answer is

THOUSANDS		
100's	10's	1's
7	2	3
1	9	8

You may, of course, do without the boxes.

Do the following subtractions:

a. $\begin{array}{r} 642,000 \\ - 118,000 \\ \hline \end{array}$	b. $\begin{array}{r} 913,000 \\ - 851,000 \\ \hline \end{array}$	c. $\begin{array}{r} 835,000 \\ - 149,000 \\ \hline \end{array}$	d. $\begin{array}{r} 740,000 \\ - 395,000 \\ \hline \end{array}$
e. $\begin{array}{r} 810,000 \\ - 283,000 \\ \hline \end{array}$	f. $\begin{array}{r} 805,000 \\ - 463,000 \\ \hline \end{array}$	g. $\begin{array}{r} 901,000 \\ - 265,000 \\ \hline \end{array}$	h. $\begin{array}{r} 800,000 \\ - 365,000 \\ \hline \end{array}$
i. $\begin{array}{r} 834,000 \\ - 96,000 \\ \hline \end{array}$	j. $\begin{array}{r} 470,000 \\ - 84,000 \\ \hline \end{array}$	k. $\begin{array}{r} 700,000 \\ - 98,000 \\ \hline \end{array}$	l. $\begin{array}{r} 107,000 \\ - 88,000 \\ \hline \end{array}$