Placement Test C

MULTIPLICATION & DIVISION

Developmental Mathematics

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PLACEMENT TEST C

How to Use the Placement Test

The Placement Test pamphlet is composed of three parts; the student's Placement Test, the educator's Placement Guidelines, and the Placement Key. The educator's Placement Guidelines and the Placement Key are contained on the inside of the front cover and the inside of the back cover of the pamphlet, respectively. The student's Placement Test is enclosed as the eight-page contents of the pamphlet. Please remove the cover of the Placement Test pamphlet for the educator, so the student does not have access to the Placement Key. Give the eight-page Placement Test to the student for completion, and use the following Placement Guidelines and Placement Key to check his or her work. It's as easy as 1, 2, 3!

Placement Guidelines

Placement Test C covers the theoretical concepts, basic facts, and practical skills in *Developmental Mathematics* Levels 8, 9, and 10. The specific Placement Test questions that address these levels are as follows:

Level 8 **Multiplication:** Concepts and Basic Facts
Questions 1–13

Level 9 **Division:** Concepts and Basic Facts
Questions 14–22

Level 10 **Hundreds and Three-Unit Numbers:** Concepts, Addition and Subtraction Skills
Questions 23–31

The student should attempt to complete the entire Placement Test until he or she cannot proceed without aid. After the student completes the questions, the educator should analyze the responses that address a specific level, item by item, and evaluate the quality of the student's performance. Typical results show a decrease in the quality of the student's performance in the more complicated concepts tested toward the end of the Placement Test. If *most* of the answers given are correct, then the student has successfully passed the current level of the Placement Test. However, if *most* of the answers are incorrect or if the student is hesitant in giving his or her answers, then the student is in need of practice, and he or she should begin the *Developmental Mathematics* curriculum with the current level. Good luck!

Mathematics Placement and Scoring System *(MPASS)*

Mathematics Programs Associates (MPA) has developed an automated computerized version of the *Developmental Mathematics* placement and scoring framework, available on disk and on the World Wide Web. Visit our Internet distributor at www.greatpyramid.com and find the placement *(MPASS)* mechanism within the mathematics section of the product module. You can also learn more about MPA and *Developmental Mathematics*.

PLACEMENT TEST C

Multiplication and Division: Concepts and Basic Facts

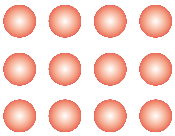
Name:_____ Date:_____

1. Describe the picture below.

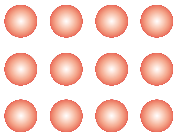
_____

_____

2. a. Make the picture show 3 x 4.



b. Make the picture show 4 x 3.



3. a. Write the answer. 3 x 2 = ___

b. Show that your answer is correct.

3 x 2 = _____

4. Write the equations.

a. You have this much money:

How many dollars do you have? _____

b. You want to make 8 sets of stars like this.

How many stars do you need? _____

5. Write the answer.

3 x 2 = ___	7 x 3 = ___	4 x 2 = ___	6 x 4 = ___
3 x 5 = ___	5 x 4 = ___	2 x 2 = ___	8 x 4 = ___
8 x 3 = ___	5 x 2 = ___	6 x 3 = ___	9 x 2 = ___
2 x 4 = ___	5 x 5 = ___	4 x 3 = ___	6 x 5 = ___
4 x 4 = ___	6 x 2 = ___	3 x 4 = ___	7 x 5 = ___
3 x 3 = ___	9 x 3 = ___	2 x 5 = ___	9 x 4 = ___
9 x 5 = ___	7 x 4 = ___	2 x 3 = ___	8 x 2 = ___
4 x 5 = ___	5 x 3 = ___	8 x 5 = ___	7 x 2 = ___

6. Write the equations.

a. One dollar is 4 quarters.
   How many quarters are in 9 dollars? _____

b. One gallon is 4 quarts.
   How many quarts are in 7 gallons? _____

c. One yard is 3 feet.
   How many feet are in 6 yards? _____

d. You had 7 nickels.
   You bought candy for 29¢.
   i. How many cents did you have? _____
   ii. How many cents are left? _____

e. Sam had 8 five dollar bills.
   He bought toys for $13.
   i. How many dollars did he have? _____
   ii. How many dollars are left? _____

f. Find the answer. (8 x 4) – (6 x 3) _____
   (9 x 3) + (7 x 5) _____

7. Write the answer.

2 x 6 = ___	4 x 6 = ___	3 x 8 = ___	3 x 7 = ___
4 x 9 = ___	5 x 7 = ___	4 x 8 = ___	5 x 6 = ___
2 x 7 = ___	2 x 9 = ___	3 x 9 = ___	4 x 7 = ___
5 x 9 = ___	5 x 8 = ___	3 x 6 = ___	2 x 6 = ___

8. Write the answer.

6 x 6 = ___	7 x 8 = ___	9 x 7 = ___	6 x 9 = ___
8 x 9 = ___	8 x 8 = ___	7 x 6 = ___	8 x 7 = ___
9 x 6 = ___	6 x 7 = ___	9 x 8 = ___	7 x 9 = ___
7 x 7 = ___	8 x 6 = ___	9 x 9 = ___	6 x 8 = ___

9. Write the equations.

a. You have 7 sets of marbles, with
8 marbles in each set.
How many marbles do you have? _____

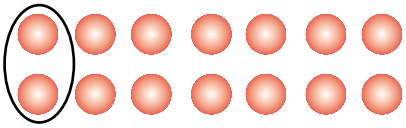
b. Miss Smith bought 9 boxes, with 8
crayons in each box.
How many crayons did she buy? _____

c. You had 9 dimes.
You bought 8 six-cent stamps.
How many cents did you pay? _____
How many cents are left? _____

d. Dan has 80 cards.
He made 7 sets with 9 cards in each set.
How many cards did he use? _____
How many cards are left? _____

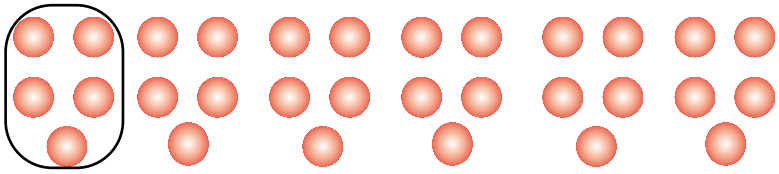
e. Find the answer. (7 x 7) + (6 x 6) _____
(8 x 9) – (7 x 8) _____

10. How many twos are in 14?



_____

11. How many fives are in 30?



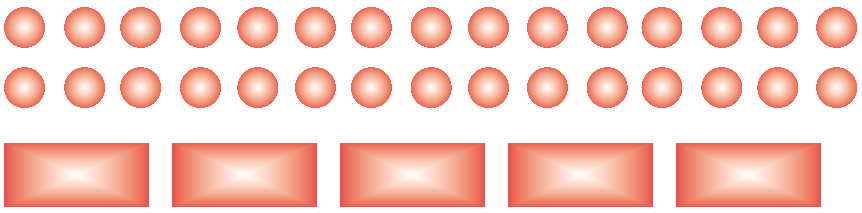
_____

12. 10 pears:

You put them in 2 plates, with the same number of pears in each plate.

How many pears are in each plate? _____

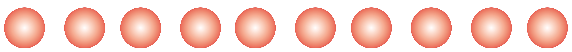
13. 30 items:



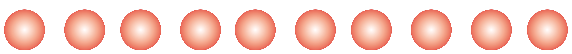
You divide them equally into 5 sets.

How many items are in each set? _____

14. a. Make the picture show 10 ÷ 2.



b. Make the picture show 10 ÷ 2 another way.



15. Use the three numbers to write four different equations.

a. 3 9 27

_____ _____

_____ _____

b. 5 8 40

_____ _____

_____ _____

16. Write the answer.

12 ÷ 2 = ___	10 ÷ 5 = ___	27 ÷ 3 = ___	12 ÷ 4 = ___
15 ÷ 5 = ___	16 ÷ 4 = ___	35 ÷ 5 = ___	12 ÷ 3 = ___
8 ÷ 4 = ___	4 ÷ 2 = ___	15 ÷ 3 = ___	14 ÷ 2 = ___
6 ÷ 3 = ___	9 ÷ 3 = ___	6 ÷ 2 = ___	8 ÷ 2 = ___
20 ÷ 5 = ___	20 ÷ 4 = ___	32 ÷ 4 = ___	45 ÷ 5 = ___

17. Write the answer.

36 ÷ 9 = ___	54 ÷ 6 = ___	42 ÷ 7 = ___	48 ÷ 8 = ___
56 ÷ 8 = ___	49 ÷ 7 = ___	63 ÷ 9 = ___	42 ÷ 6 = ___
72 ÷ 9 = ___	64 ÷ 8 = ___	48 ÷ 6 = ___	56 ÷ 8 = ___
63 ÷ 7 = ___	54 ÷ 9 = ___	72 ÷ 8 = ___	81 ÷ 9 = ___

18. Write the equation.

a. You have 35 items.
You make sets of 7 items each.
What is the result? _____
You have 35 items.
You divide equally into 5 sets.
What is the result? _____

b. You have 32 items.
You make sets of 4 items each.
What is the result? _____
You have 32 items.
You divide equally into 8 sets.
What is the result? _____

c. You have 40 items.
You make sets of 5 items each.
What is the result? _____
You have 40 items.
You divide equally into 8 sets.
What is the result? _____

19. Write the answer.

$17 \div 2 =$ ___	$37 \div 5 =$ ___	$23 \div 4 =$ ___
$16 \div 3 =$ ___	$26 \div 4 =$ ___	$29 \div 3 =$ ___

20. Write the answer.

$17 \div 6 =$ ___	$32 \div 7 =$ ___	$57 \div 9 =$ ___
$23 \div 7 =$ ___	$48 \div 9 =$ ___	$18 \div 8 =$ ___

21. a. You have 14 balls.
You want to make sets of 4 balls each.
How many balls can you use? _____
How many sets can you make? _____
How many balls remain? _____

b. You have 14 balls.
You want to make 3 sets with
the same number of balls in each set.
How many balls can you use? _____
How many balls are in each set? _____
How many balls remain? _____

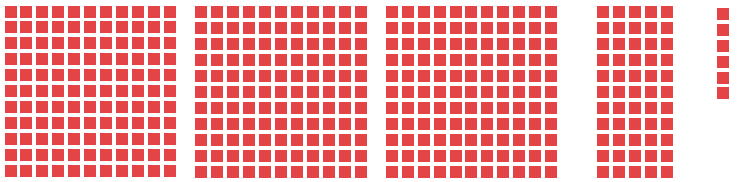
22. Write the equation.

a. You have 7 items.
You make sets of 7 items each.
What is the result? _____
You have 7 items.
You divide equally into 1 set.
What is the result? _____

b. You have 3 items.
You make sets of 1 item each.
What is the result? _____
You have 3 items.
You make 3 sets.
What is the result? _____

c. You have 0 items.
You try to make sets of 2 items each.
What is the result? _____
You have 0 items.
You try to divide equally into 2 sets.
What is the result? _____

23. a. How many items are in the picture below?



100's	10's	1's

b. How many dollars are in the picture below?

100's	10's	1's

c. How many cents are in the picture below?

100's	10's	1's

24. Rewrite the numbers presented in the boxes as they should be written.

a.

100's	10's	1's
	56	

should be written:

b.

100's	10's	1's
	4	35

should be written:

c.

100's	10's	1's
	27	38

should be written:

25. In the numeral to the right,

583

3 is the number of _____

8 is the number of _____

5 is the number of _____

26. a. Write the numeral which is the same as

600 + 20 + 4 _____

b. Write the numeral which is the same as

0 ten, 9 ones, and 4 hundreds. _____

27. Add.

a.	b.	c.	d.	e.
322 + 158	705 + 68	274 + 331	107 23 + 234	221 70 + 415

28. Add.

a.	b.	c.	d.	e.
328 265 + 182	185 96 + 369	396 389 + 120	289 210 + 59	107 339 + 174

29. Subtract.

a.	b.	c.	d.	e.
700 – 242	800 – 281	900 – 184	601 – 217	302 – 274

30. Subtract.

a.	b.	c.	d.	e.
$6.98 – $1.72	$7.18 – $2.39	$9.30 – $5.12	$5.04 – $4.78	$8.00 – $3.29

31. Solve the following problems.

a You had 361 stamps.
You sold 198 stamps.
How many stamps do you have now? _____

b. You had $500.
Now you have $368.
How many dollars did you spend? _____

c. The difference between two numbers is 128.
The small number is 695.
What is the larger number? _____

d. A = 362 + 298 B = A + 147 What number is B? _____

PLACEMENT KEY C

Although some of the answers may seem obvious, we have included the answers to all of the Placement Test questions within the following table.

Level 8		Level 9		Level 10	
Question	Answer	Question	Answer	Question	Answer
1	2 x 4 = 8	14a		23a	356
	4 x 2 = 8	14b		23b	420
2a		15a		23c	604
2b		15b		24a	560
3a	6	16	6, 2, 9, 3	24b	75
3b	2 x 3 = 6		3, 4, 7, 4	24c	308
4a	3 x 5 =15		2, 2, 5, 7	25	Ones
4b	8 x 7 = 56		2, 3, 3, 4		Tens
5	6, 21, 8, 24		4, 5, 8, 9		Hundreds
	15, 20, 4, 32	17	4, 9, 6, 6	26a	624
	24, 10, 18, 18		7, 7, 7, 7	26b	94
	8, 25, 12, 30		8, 8, 8, 7	27a	480
	16, 12, 12, 35		9, 6, 9, 9	27b	773
	9, 27, 10, 36	18a	35 ÷ 7 = 5	27c	605
	45, 28, 6, 16		35 ÷ 5 = 7	27d	364
	20, 15, 40, 14	18b	32 ÷ 4 = 8	27e	706
6a	9 x 4 = 36		32 ÷ 8 = 4	28a	775
6b	7 x 4 = 28	18c	40 ÷ 5 = 8	28b	650
6c	6 x 3 = 18		40 ÷ 8 = 5	28c	905
6d	7 x 5 = 35	19	8 R1, 7 R2, 5 R3	28d	558
	35 – 29 = 6		5 R1, 6 R2, 9 R2	28e	620
6e	8 x 5 = 40	20	2 R5, 4 R4, 6 R3	29a	458
	40 – 13 = 27		3 R2, 5 R3, 2 R2	29b	519
6f	32 – 18 = 14	21a	12, 3, 2	29c	716
	27 + 35 = 52	21b	12, 4, 2	29d	384
7	12, 24, 24, 21	22a	1, 7	29e	28
	36, 35, 32, 30	22b	3, 1	30a	$5.26
	14, 18, 27, 28	22c	0, 0	30b	$4.79
	45, 40, 18, 12			30c	$4.18
8	36, 56, 63, 54			30d	$0.26
	72, 64, 42, 56			30e	$4.71
	54, 42, 72, 63			31a	163
	49, 48, 81, 48			31b	132
9a	7 x 8 = 56			31c	823
9b	9 x 8 = 72			31d	807
9c	8 x 6 = 48				
	90 – 48 = 42				
9d	7 x 9 = 63				
	80 – 63 = 17				
9e	49 + 36 = 85				
	72 – 56 = 16				
10	7				
11	6				
12	5				
13	6				

Mathematics Programs Associates (MPA), a Long Island-based family enterprise providing educational products and consulting services, exists today primarily due to the vision and determination of its founder, Dr. L. George Saad.

During the early 1950s, Dr. Saad taught mathematics education at the University of Ain-shams in Cairo, Egypt. In 1954, with an innovative idea for self-teaching, he enrolled as a doctoral candidate at the University of Birmingham in England. During the following three years, Dr. Saad devoted his research to the elementary and secondary students' understanding of basic mathematics, and he developed the methodology for a self-teaching mathematics program. In 1957, Dr. Saad received the Ph.D. in mathematics education. He then returned to Cairo and began the development of a government-sponsored mathematics curriculum for use throughout the country's elementary school system. In 1959, samples of Dr. Saad's materials were tested in the Cairo schools and, a few years later, his curriculum was being used throughout the country and in other Middle Eastern nations. Due to his popularity in the Middle East, in 1969, Dr. Saad was invited to the United States as a visiting professor at the State University of New York, and in the same year, accepted a professorship at Long Island University. In 1970, with an inspiration to repeat his success, Dr. Saad immigrated his family to the United States and began working on the rudiments of a self-teaching mathematics workbook series. In 1974, he incorporated MPA in New York to design, develop and distribute his work. Today, educators and students in the United States, and many other nations throughout the world, are benefiting from Dr. Saad's lifelong achievement,

Developmental Mathematics

A Self-Teaching Program

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