

3rd Mathematics Achievement Test
Patterns, Functions and Algebra Standard

Question 10
Benchmark A
March 2008

A plant is 12 inches tall today. The plant grows three inches more each week.

Complete the table below showing the plant's height over the next three weeks.

Week	Height
Today	12 inches
In one week	
In two weeks	
In three weeks	

If this growth pattern continues, how many inches tall will the plant be in five weeks? _____

Show or explain your answer using pictures, words or numbers.

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Question 8
Benchmark A
March 2005

8. Find the missing number in the pattern.

750, 775, 800, ? , 850, 875

- A. 725
 B. 825
 C. 900

Question 10
Benchmark A
March 2005

10. Write the missing numbers to continue this pattern.

8, 10, 14, 20, _____, _____

Describe the rule for this pattern.

Question 10
Benchmark A
March 2006

Sam and his mom put pennies into his bank and wrote the amount in this table.

Complete the table by continuing the pattern.

Money Saved

Sam	Mom
5¢	10¢
6¢	12¢
7¢	14¢
8¢	
9¢	
10¢	
11¢	

Describe the rule for this pattern.

Question 18
Benchmark A
March 2005

18. Which describes the rule for this pattern?

2, 6, 18, 54

- A. multiply by 3
- B. multiply by 4
- C. multiply by 6

Question 23
Benchmark A
March 2005

23. Which is a rule for the pattern below?



- A. Take away two circles.
- B. Add two circles.
- C. Add four circles.

Question 12
Benchmark A
Fall 2005

12. What is the rule for this input-output table?

Input	Output
3	12
5	20
8	32

- A. Multiply by 4.
- B. Multiply by 5.
- C. Multiply by 6.

Question 17
Benchmark A
Fall 2005

17. Write the missing numbers to continue this pattern.

15, 17, 19, 21, _____, _____

Describe the rule for this pattern.

Question 12
Benchmark A
Spring 2007

Laura baked 36 cookies. Her brother Sam ate n cookies.

Which expression represents the number of cookies Laura has left?

- A. $n - 36$
- B. $36 - n$
- C. $36 \div n$

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Question 15
Benchmark A
Spring 2007

What number comes next in this pattern?

30, 45, 60, 75,

Describe the rule.

Question 28
Benchmark A
Spring 2007

A pattern is shown.



Figure 1



Figure 2



Figure 3

How many stars will Figure 4 have?

- A. 4
- B. 9
- C. 12

Question 42
Benchmark B
March 2005

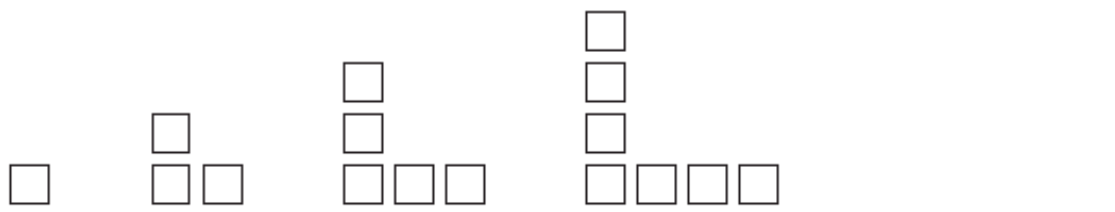
42. Ricky earned \$50 helping his neighbors. He spent \$4 each week for snacks from the money he earned.

How much money did Ricky have left after five weeks?

Use pictures, words or numbers to show how you found the amount of money Ricky had left after five weeks.

Question 31
Benchmark B
March 2006

André made this pattern of figures with tiles.



How many tiles would be in the next figure?

- A. 8
- B. 9
- C. 10

Question 3
Benchmark C
May 2009

3. Which number makes this number sentence true?

$$7 + \boxed{?} = 32$$

- A. 15
- B. 25
- C. 39

3rd Mathematics Achievement Test
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Question 8
Benchmark C
March 2008

Which number makes this statement true?

$$18 + \boxed{?} < 22$$

- A. 3
- B. 8
- C. 14

Question 38
Benchmark C
March 2005

38. Which number makes this number sentence true?

$$\boxed{?} + 3 < 15$$

- A. 5
- B. 12
- C. 18

Question 3
Benchmark C
Fall 2005

3. Which number makes this number sentence true?

$$\triangle ? - 9 > 4$$

- A. 12
- B. 13
- C. 16

Question 40
Benchmark C
March 2006

Which number makes this statement true?

$$\triangle ? - 8 = 13$$

- A. 5
- B. 21
- C. 84

Question 3
Benchmark C
Spring 2007

Which number makes this number sentence true?

$$14 + \triangle ? = 21$$

- A. 7
- B. 14
- C. 35

Question 12
Benchmark D
May 2009

12. Which table has three pairs of values that make this number sentence true?

$$\triangle + 5 = \square$$

A.

\triangle	\square
3	8
4	10
5	12

B.

\triangle	\square
3	8
4	9
5	10

C.

\triangle	\square
8	3
9	4
10	5

Question 31
Benchmark D
March 2008

31. The table shows the height of a candle that is burning.

Time	Height
1:00 p.m.	45 cm
2:00 p.m.	40 cm
3:00 p.m.	35 cm

If the pattern continues, what will the height of the candle be at 5:00 p.m.?

- A. 30 cm
- B. 25 cm
- C. 20 cm

Question 46
Benchmark D
March 2006

Monica had 18 books. She shared some books with a friend and had 12 books left.

Which number sentence could be used to find the number of books Monica shared?

- A. $18 - n = 12$
- B. $12 - 18 = n$
- C. $18 + 12 = n$

Question 12
Benchmark D
Spring 2007

Laura baked 36 cookies. Her brother Sam ate n cookies.

Which expression represents the number of cookies Laura has left?

- A. $n - 36$
- B. $36 - n$
- C. $36 \div n$

Question 4
Benchmark E
March 2005

4. It takes 38 stickers to fill a page. Charlene has 14 stickers. Which number sentence shows how many more stickers she needs to fill the page?

A. $\triangle + 8 = 14$

B. $14 + \triangle = 38$

C. $14 + 38 = \triangle$

Question 15
Benchmark E
Fall 2005

15. Donte grew 12 bean plants. Katie grew 17 bean plants. Which number sentence shows how to find the total number of plants they grew?

A. $12 + 17 = \boxed{?}$

B. $\boxed{?} - 17 = 12$

C. $17 + 17 = \boxed{?}$

Question 45
Benchmark E
March 2006

Carole has 7 marbles. Ezra gives her 3 marbles. Tonya gave Carole 2 more marbles. The total number of marbles that Carole has can be shown by $(7 + 3) + 2$.

This is the same as:

A. $7 + (3 + 2)$

B. $(7 + 3) + (7 + 2)$

C. $(7 + 3) + (3 + 2)$

Question 16
Benchmark F
May 2009

16. The table below shows the number of pencils and the number of crayons that some students have.

Number of Pencils	Number of Crayons
1	3
2	4
3	5
4	6
5	7

Which describes the pattern shown in the table?

- A. Each student has the same number of pencils and crayons.
- B. Each student has two more crayons than pencils.
- C. Each student has three times as many crayons as pencils.

Question 41
Benchmark F
March 2008

Marsha reads 5 pages from her book every night.

Which table shows the total number of pages Marsha has read in her book at the end of each night?

A.

Night	Total Pages Read
1	5
2	15
3	25
4	35
5	45

B.

Night	Total Pages Read
1	6
2	7
3	8
4	9
5	10

C.

Night	Total Pages Read
1	5
2	10
3	15
4	20
5	25

Question 14
Benchmark F
March 2005

14. Marco buys packages of marbles. Each package has 2 red marbles. Which table shows the total number of red marbles Marco will get in one to four packages?

A.

Number of Packages	Total Number of Red Marbles
1	2
2	3
3	4
4	5

B.

Number of Packages	Total Number of Red Marbles
1	2
2	4
3	6
4	8

C.

Number of Packages	Total Number of Red Marbles
1	3
2	6
3	9
4	12

Question 10
Benchmark F
March 2006

Sam and his mom put pennies into his bank and wrote the amount in this table.

Complete the table by continuing the pattern.

Money Saved

Sam	Mom
5¢	10¢
6¢	12¢
7¢	14¢
8¢	
9¢	
10¢	
11¢	

Describe the rule for this pattern.

Question 34
Benchmark F
Spring 2007

A table is shown.

Input	Output
10	12
8	10
5	7
3	5

Which rule was used to find the output for each input?

- A. add 2 to input
- B. multiply input by 2
- C. subtract 2 from input

Question 18
Benchmark G
March 2006

A tomato plant is 7 inches tall. It grows 2 inches each week.
How tall will the tomato plant be at the end of 3 weeks?

- A. 9 inches
- B. 10 inches
- C. 13 inches