

FCAT Sample Test Materials

These sample test materials are designed to help students prepare to answer FCAT questions. These materials introduce them to the kinds of questions they will answer when they take the FCAT and include hints for responding to FCAT questions. The FCAT Mathematics sample test materials for Grade 4 are composed of the books described below:

- Sample Test Book**
Includes a mathematics sample test, a sample answer sheet, and instructions for completing the sample test. (Copies are available for all students in the tested grade.)
 - Sample Answer Key**
Includes answers and explanations for the questions in the sample test. (Copies are available for classroom teachers only.)
- = This book

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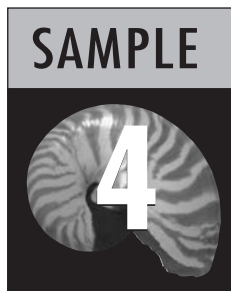
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FCAT Mathematics Sample Answer Key



This book contains answers to the FCAT Mathematics sample test questions. It also gives the Sunshine State Standards benchmark assessed by each item on the sample test. In September 2007, the State Board of Education adopted updated benchmarks. These new benchmarks are included in this booklet to provide teachers with additional information. For more information follow the link to the Florida Standards website at: <http://www.floridastandards.org/index.aspx>.

In addition, one or more possible approaches to solving the questions are provided. Students may use approaches other than these and still receive credit if they also obtain a correct answer.

Multiple-choice items on FCAT Mathematics tests are scored by awarding one point for each correct answer.

1 The correct answer is B (30).

Strand: A—Number Sense, Concepts, and Operations

Old Benchmark: MA.A.2.2.1 The student uses place-value concepts of grouping based upon powers of ten (thousandths, hundredths, tenths, ones, tens, hundreds, thousands) within the decimal number system.

New Benchmark: MA.4.A.6.1 Use and represent numbers through millions in various contexts, including estimation of relative sizes of amounts or distances.

To decide what value the digit 3 has, think about how to read the number and the place each digit holds. The number is two thousand, two hundred thirty-five. The first 2 is in the thousands place. The second 2 is in the hundreds place. The 3 is in the tens place, and the 5 is in the ones place.

The 3 has a value of 3 tens, which is equivalent to 30.

2 The correct answer is H (\times and $-$).

Strand: A—Number Sense, Concepts, and Operations

Old Benchmark: MA.A.3.2.2 The student selects the appropriate operation to solve specific problems involving addition, subtraction, and multiplication of whole numbers, decimals, and fractions, and division of whole numbers.

New Benchmark: MA.4.A.4.3 Recognize and write algebraic expressions for functions with two operations.

To solve this problem, think about the problem. If 3 alligators each laid 30 eggs, then 3×30 eggs were laid. If all but 7 eggs hatched, then those 7 eggs must be removed from the total number of eggs laid, because they did not hatch.

So $3 \times 30 - 7$ eggs hatched.

Therefore, the operation symbols that should be used in the boxes are \times and $-$, respectively.

3 The correct answer is D (11°F).

Strand: E—Data Analysis and Probability

Old Benchmark: MA.E.1.2.2 The student determines range, mean, median, and mode from sets of data. (Also assesses MA.E.1.2.3 analyzes real-world data to recognize patterns and relationships of the measures of central tendency using tables, charts, histograms, bar graphs, line graphs, pictographs, and circle graphs generated by appropriate technology, including calculators and computers.)

New Benchmark: Note: This benchmark will not be assessed in Grade 4 after 2010.

To find the range of the temperatures shown in the graph, first find the highest and the lowest temperatures. The range is the difference between the highest and lowest temperatures. The highest temperature shown is for Key West, which is 79°F. The lowest is for Jacksonville, which is 68°F. The difference can be found by subtracting:

$$79 - 68 = 11$$

The range is 11°F.

- 4 The correct answer is H (the tile that shows a pair of shoes).

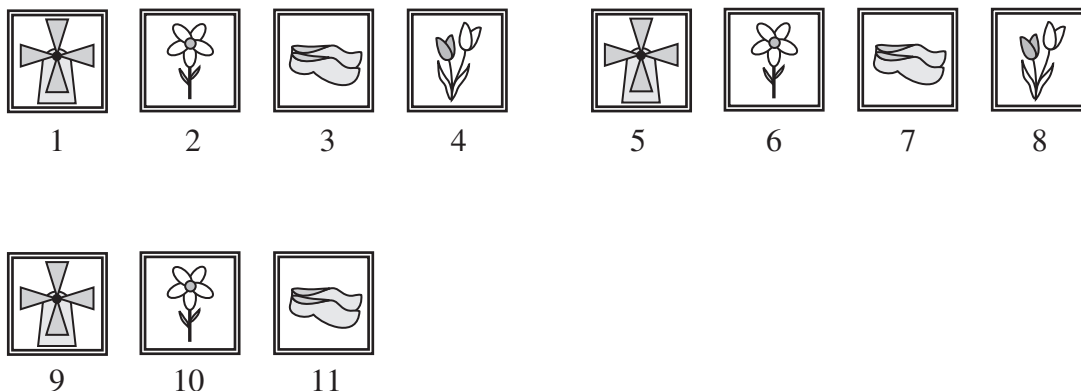
Strand: D—Algebraic Thinking

Old Benchmark: MA.D.1.2.1 The student describes a wide variety of patterns and relationships through models, such as manipulatives, tables, graphs, rules using algebraic symbols. (Also assesses MA.D.1.2.2 generalizes a pattern, relation, or function to explain how a change in one quantity results in a change in another.)

New Benchmark: MA.4.A.4.1 Generate algebraic rules and use all four operations to describe patterns, including nonnumeric growing or repeating patterns.

Note: Although this benchmark will be assessed in Grade 4, the sample provided is not indicative of the way in which the new benchmark will be assessed at Grade 4 in 2011.

To find the 11th tile in the pattern, think about how the pattern was made. The pattern was made using 4 different tiles, and the pattern repeats after 4 tiles. The pattern will be made using tiles in the order: windmill, single daisy, shoes, double tulip. The graphics shown below depict the pattern through the 11th tile.



The 11th tile in the pattern will be the tile that shows a pair of shoes.

5 The correct answer is C (55 inches).

Strand: B—Measurement

Old Benchmark: MA.B.2.2.1 The student uses direct (measured) and indirect (not measured) measures to calculate and compare measurable characteristics.

New Benchmark: Note: This benchmark will not be assessed in Grade 4 after 2010.

To find Jonathan's height in inches, change the 4 feet into inches and then add the remaining 7 inches. Since 1 foot = 12 inches, 4×12 inches or 48 inches equals 4 feet. Then add 7 inches to get Jonathan's total height.

$$48 + 7 = 55$$

Jonathan's height in inches is 55 inches.

6 The correct answer is G (3:40).

Strand: B—Measurement

Old Benchmark: MA.B.1.2.2 The student solves real-world problems involving length, weight, perimeter, area, capacity, volume, time, temperature, and angles.

New Benchmark: Note: This benchmark will not be assessed in Grade 4 after 2010.

To solve the problem, read the clock that shows the time Kenny finished practicing. The clock shows the time as 4:10. Kenny practiced for 30 minutes, so he must have started practicing 30 minutes before the time shown on the clock. To find the time he started practicing, count 30 minutes by 5s counterclockwise, which is 3:40.

Kenny started practicing at 3:40.

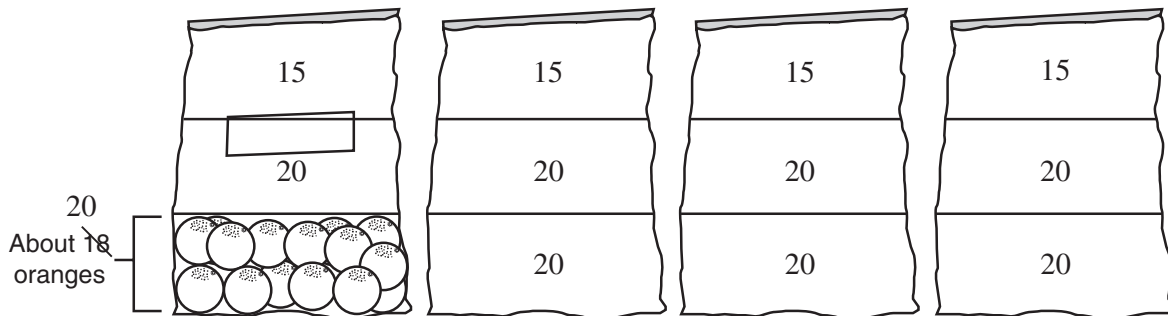
7 The correct answer is C (210).

Strand: A—Number Sense, Concepts, and Operations

Old Benchmark: MA.A.4.2.1 The student uses and justifies different estimation strategies in a real-world problem situation and determines the reasonableness of results of calculations in a given problem situation. (Also assesses MA.B.3.2.1 solves real-world problems involving estimates of measurements, including length, time, weight, temperature, money, perimeter, area, and volume.)

New Benchmark: MA.4.A.6.6 Estimate and describe reasonableness of estimates; determine the appropriateness of an estimate versus an exact answer.

First Strategy:



It appears that each bag can be divided into 3 sections. Since 18 is an estimate (about 18 oranges) and the bag isn't a perfect rectangle, 15 can be used as an estimate of the top narrower section of the bags and 20 in the middle and bottom sections. There are 4 top sections of 15 oranges each, or $15 \times 4 = 60$. There are 8 remaining sections of 20 oranges each, or $20 \times 8 = 160$.

$$60 + 160 = 220$$

Second Strategy:

To find the number of oranges that are needed to fill all 4 bags to the top, first look at the number of oranges in the first bag. There are about 18 oranges in the bag, and the bag is about one-third full. So the first bag holds about 18×3 oranges, or 54 oranges. Each bag holds the same amount, so 4 bags each hold about 54 oranges, and $54 \times 4 = 216$. The answer choice closest to 216 is 210. The other answer choices are not as close to 216 as 210.

The best answer choice is 210.

8 The correct answer is I (1).

Strand: E—Data Analysis and Probability

Old Benchmark: MA.E.1.2.1 The student solves problems by generating, collecting, organizing, displaying, and analyzing data using histograms, bar graphs, circle graphs, line graphs, pictographs, and charts.

New Benchmark: Note: This benchmark will not be assessed in Grade 4 after 2010.

To solve this problem, decide how to find the combined number of fruit and vegetable servings. You must add the number of servings of fruits and vegetables, and then subtract that sum from the number of servings of bread. According to the graph there are 2 servings of fruits and 3 servings of vegetables, $2 + 3 = 5$. According to the graph there are 6 servings of bread, $6 - 5 = 1$.

There is 1 more serving of bread than servings of fruits and vegetables combined.

9 The correct answer is A (\$6.38).

Strand: A—Number Sense, Concepts, and Operations

Old Benchmark: MA.A.3.2.3 The student adds, subtracts, and multiplies whole numbers, decimals, and fractions, including mixed numbers, and divides whole numbers to solve real-world problems, using appropriate methods of computing, such as mental mathematics, paper and pencil, and calculator.

New Benchmark: MA.4.A.6.1 Use and represent numbers through millions in various contexts, including estimation of relative sizes of amounts or distances.

To solve the problem, decide which operation is needed to find the change Donna should receive from the \$20.00 she used to pay the dinner bill. To find change, Donna should begin with \$20.00 and subtract the amount she owes, $20.00 - 13.62 = 6.38$.

Donna should receive \$6.38 in change from the \$20.00.

- 12** The correct answer is F ($45 \times 5 = w$).

Strand: D—Algebraic Thinking

Old Benchmark: MA.D.2.2.1 The student represents a given simple problem situation using diagrams, models, and symbolic expressions translated from verbal phrases, or verbal phrases translated from symbolic expressions, etc. (Also assesses MA.D.2.2.2 uses informal methods, such as physical models and graphs, to solve real-world problems involving equations and inequalities.)

New Benchmark: MA.4.A.4.2 Describe mathematics relationships using expressions, equations, and visual representations.

To solve this problem, decide which operation is used to find the total number of milliliters of water Gerald poured into the sugar solution over the 5-day experiment. He poured 45 milliliters each day for 5 days, so he poured $45 + 45 + 45 + 45 + 45$ milliliters or 45×5 milliliters into the solution. Since w represents the total number of milliliters, $45 \times 5 = w$, or $5 \times 45 = w$.

The equation that best shows this is $45 \times 5 = w$.

