

Introduction - Grade 3 Mathematics

The following released test questions are taken from the Grade 3 Mathematics Standards Test. This test is one of the California Standards Tests administered as part of the Standardized Testing and Reporting (STAR) Program under policies set by the State Board of Education.

All questions on the California Standards Tests are evaluated by committees of content experts, including teachers and administrators, to ensure their appropriateness for measuring the California academic content standards in Grade 3 Mathematics. In addition to content, all items are reviewed and approved to ensure their adherence to the principles of fairness and to ensure no bias exists with respect to characteristics such as gender, ethnicity, and language.

This document contains released test questions from the California Standards Test forms in 2003. First on the pages that follow are lists of the standards assessed on the Grade 3 Mathematics Test. Next are released test questions. Following the questions is a table that gives the correct answer for each question, the content standard that each question is measuring, and the year each question last appeared on the test.

The following table lists each strand/reporting cluster, the number of items that appear on the exam, and the number of released test questions that appear in this document.

STRAND/REPORTING CLUSTER	NUMBER OF QUESTIONS ON EXAM	NUMBER OF RELEASED TEST QUESTIONS
Number Sense – Place Value, Fractions, and Decimals	16	5
Number Sense – Addition, Subtraction, Multiplication, and Division	16	3
Algebra and Functions	12	3
Measurement and Geometry	16	4
Statistics, Data Analysis, and Probability	5	1
TOTAL	65	16

In selecting test questions for release, three criteria are used: (1) the questions adequately cover a selection of the academic content standards assessed on the Grade 3 Mathematics Test; (2) the questions demonstrate a range of difficulty; and (3) the questions present a variety of ways standards can be assessed. These released test questions do not reflect all of the ways the standards may be assessed. Released test questions will not appear on future tests.

For more information about the California Standards Tests, visit the California Department of Education's Web site at <http://www.cde.ca.gov/statetests/star/> or <http://www.cde.ca.gov/ta/tg/sr/resources.asp>.

THE NUMBER SENSE STRAND

In Grade 3, there are two reporting clusters within the Number Sense strand: 1) Place Value, Fractions, and Decimals and 2) Addition, Subtraction, Multiplication, and Division. This booklet contains released test questions for each of these clusters.

The following nine California content standards are included in the Place Value, Fractions, and Decimals reporting cluster of the Number Sense strand and are represented in this booklet by five test questions. These questions represent only some ways in which these standards may be assessed on the Grade 3 California Mathematics Standards Test.

CALIFORNIA CONTENT STANDARDS IN THIS REPORTING CLUSTER

Number Sense

Standard Set 1.0 Students understand the place value of whole numbers:

3NS1.1	Count, read, and write whole numbers to 10,000.
3NS1.2	Compare and order whole numbers to 10,000.
3NS1.3*	Identify the place value for each digit in numbers to 10,000.
3NS1.4	Round off numbers to 10,000 to the nearest ten, hundred, and thousand.
3NS1.5*	Use expanded notation to represent numbers (e.g., $3,206 = 3,000 + 200 + 6$).

Standard Set 3.0 Students understand the relationship between whole numbers, simple fractions, and decimals:

3NS3.1	Compare fractions represented by drawings or concrete materials to show equivalency and to add and subtract simple fractions in context (e.g., $1/2$ of a pizza is the same amount as $2/4$ of another pizza that is the same size; show that $3/8$ is larger than $1/4$).
3NS3.2*	Add and subtract simple fractions (e.g., determine that $1/8 + 3/8$ is the same as $1/2$).
3NS3.3*	Solve problems involving addition, subtraction, multiplication, and division of money amounts in decimal notation and multiply and divide money amounts in decimal notation by using whole-number multipliers and divisors.
3NS3.4	Know and understand that fractions and decimals are two different representations of the same concept (e.g., 50 cents is $1/2$ of a dollar, 75 cents is $3/4$ of a dollar).

* Denotes key standards (*Mathematics Framework for California Public Schools*)

The following seven California content standards are included in the Addition, Subtraction, Multiplication, and Division reporting cluster of the Number Sense strand and are represented in this booklet by three test questions. These questions represent only some ways in which these standards may be assessed on the Grade 3 California Mathematics Standards Test.

CALIFORNIA CONTENT STANDARDS IN THIS REPORTING CLUSTER

Number Sense

Standard Set 2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

3NS2.1*	Find the sum or difference of two whole numbers between 0 and 10,000.
3NS2.3*	Use the inverse relationship of multiplication and division to compute and check results.
3NS2.4*	Solve simple problems involving multiplication of multi-digit numbers by one-digit numbers ($3,671 \times 3 = \underline{\quad}$).
3NS2.5	Solve division problems in which a multi-digit number is evenly divided by a one-digit number ($135 \div 5 = \underline{\quad}$).
3NS2.6	Understand the special properties of 0 and 1 in multiplication and division.
3NS2.7	Determine the unit cost when given the total cost and number of units.
3NS2.8	Solve problems that require two or more of the skills mentioned above.

* Denotes key standards (*Mathematics Framework for California Public Schools*)

THE ALGEBRA AND FUNCTIONS STRAND/REPORTING CLUSTER

The following seven California content standards are included in the Algebra and Functions strand/reporting cluster and are represented in this booklet by three test questions. These questions represent only some ways in which these standards may be assessed on the Grade 3 California Mathematics Standards Test.

CALIFORNIA CONTENT STANDARDS IN THIS STRAND/CLUSTER

Algebra and Functions

Standard Set 1.0 Students select appropriate symbols, operations, and properties to represent, describe, simplify, and solve simple number relationships:

3AF1.1* Represent relationships of quantities in the form of mathematical expressions, equations, or inequalities.

3AF1.2 Solve problems involving numeric equations or inequalities.

3AF1.3 Select appropriate operational and relational symbols to make an expression true (e.g., if $4 \underline{\quad} 3 = 12$, what operational symbol goes in the blank?).

3AF1.4 Express simple unit conversions in symbolic form (e.g., $\underline{\quad}$ inches = $\underline{\quad}$ feet \times 12).

3AF1.5 Recognize and use the commutative and associative properties of multiplication (e.g., if $5 \times 7 = 35$, then what is 7×5 ? and if $5 \times 7 \times 3 = 105$, then what is $7 \times 3 \times 5$?).

Standard Set 2.0 Students represent simple functional relationships:

3AF2.1* Solve simple problems involving a functional relationship between two quantities (e.g., find the total cost of multiple items given the cost per unit).

3AF2.2 Extend and recognize a linear pattern by its rules (e.g., the number of legs on a given number of horses may be calculated by counting by 4s or by multiplying the number of horses by 4).

* Denotes key standards (*Mathematics Framework for California Public Schools*)

THE MEASUREMENT AND GEOMETRY STRAND/REPORTING CLUSTER

The following ten California content standards are included in the Measurement and Geometry strand/reporting cluster and are represented in this booklet by four test questions. These questions represent only some ways in which these standards may be assessed on the Grade 3 California Mathematics Standards Test.

CALIFORNIA CONTENT STANDARDS IN THIS STRAND/CLUSTER

Measurement and Geometry

Standard Set 1.0 Students choose and use appropriate units and measurement tools to quantify the properties of objects:

3MG1.1 Choose the appropriate tools and units (metric and U.S.) and estimate and measure the length, liquid volume, and weight/mass of given objects.

3MG1.2* Estimate or determine the area and volume of solid figures by covering them with squares or by counting the number of cubes that would fill them.

3MG1.3* Find the perimeter of a polygon with integer sides.

3MG1.4 Carry out simple unit conversions within a system of measurement (e.g., centimeters and meters, hours and minutes).

Standard Set 2.0 Students describe and compare the attributes of plane and solid geometric figures and use their understanding to show relationships and solve problems:

3MG2.1* Identify, describe, and classify polygons (including pentagons, hexagons, and octagons).

3MG2.2* Identify attributes of triangles (e.g., two equal sides for the isosceles triangle, three equal sides for the equilateral triangle, right angle for the right triangle).

3MG2.3* Identify attributes of quadrilaterals (e.g., parallel sides for the parallelogram, right angles for the rectangle, equal sides and right angles for the square).

3MG2.4 Identify right angles in geometric figures or in appropriate objects and determine whether other angles are greater or less than a right angle.

3MG2.5 Identify, describe, and classify common three-dimensional geometric objects (e.g., cube, rectangular solid, sphere, prism, pyramid, cone, cylinder).

3MG2.6 Identify common solid objects that are the components needed to make a more complex solid object.

* Denotes key standards (*Mathematics Framework for California Public Schools*)

THE STATISTICS, DATA ANALYSIS, AND PROBABILITY STRAND/REPORTING CLUSTER

The following three California content standards are included in the Statistics, Data Analysis, and Probability strand/reporting cluster and are represented in this booklet by one test question. This question represents only one way in which these standards may be assessed on the Grade 3 California Mathematics Standards Test.

CALIFORNIA CONTENT STANDARDS IN THIS STRAND/CLUSTER

Statistics, Data Analysis, and Probability

Standard Set 1.0 Students conduct simple probability experiments by determining the number of possible outcomes and make simple predictions:

3PS1.1	Identify whether common events are certain, likely, unlikely, or improbable.
3PS1.2*	Record the possible outcomes for a simple event (e.g., tossing a coin) and systematically keep track of the outcomes when the event is repeated many times.
3PS1.3*	Summarize and display the results of probability experiments in a clear and organized way (e.g., use a bar graph or a line plot).

* Denotes key standards (*Mathematics Framework for California Public Schools*)

Released Test Questions

Math

3

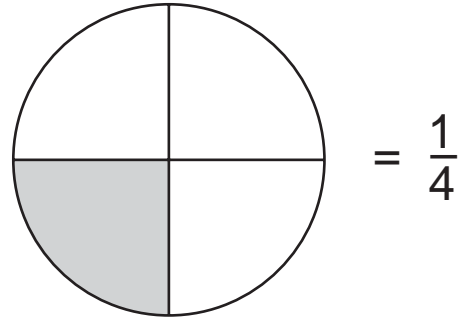
1 Which set of numbers is in order from greatest to least?

- A 147, 163, 234, 275
- B 275, 234, 163, 147
- C 275, 163, 234, 147
- D 163, 275, 234, 147

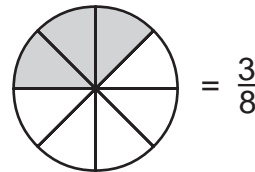
2 Sophie has 527 seashells in her collection. Which of these equals 527?

- A $5 + 2 + 7$
- B $5 + 20 + 700$
- C $500 + 20 + 7$
- D $500 + 200 + 70$

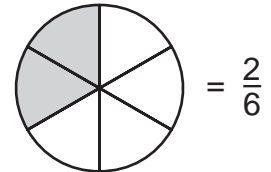
3 The circle shows $\frac{1}{4}$ shaded.



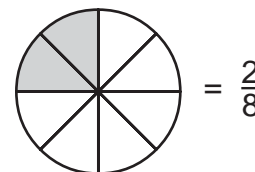
Which fractional part of a circle below is equal to $\frac{1}{4}$?



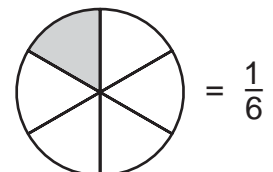
A



C



B



D

4

$$\frac{1}{4} + \frac{2}{4} =$$

A $\frac{6}{6}$

B $\frac{2}{6}$

C $\frac{2}{3}$

D $\frac{3}{4}$

5

Reggie compared the prices of two radios. The table below shows the prices.

Cost of Radios

Brand	Cost
A	\$31.47
B	\$34.71

How much more does Brand B cost than Brand A?

A \$3.24

B \$3.26

C \$3.34

D \$3.36

6

$$9000 - 3782 =$$

A 5218

B 5328

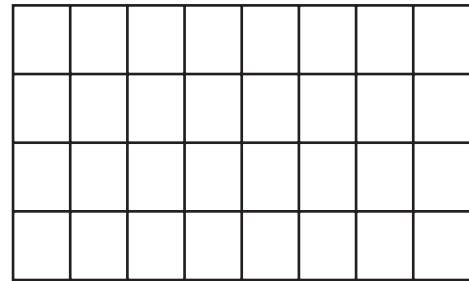
C 6782

D 12,782

7

The figure below is a model for the multiplication sentence.

$$8 \times 4 = 32$$



Which division sentence is modeled by the same figure?

A $8 \div 4 = 2$

B $12 \div 4 = 3$

C $24 \div 8 = 3$

D $32 \div 8 = 4$

Released Test Questions

Math

3

8 A company has 6 big trucks. Each truck has 18 wheels. How many wheels is this in all?

- A 24
- B 96
- C 108
- D 116

9 Mr. Guzman bought 48 doughnuts packed equally into 4 boxes. Which number sentence shows how to find the number of doughnuts in each box?

- A $48 - 4 = \square$
- B $48 \div 4 = \square$
- C $48 + 4 = \square$
- D $48 \times 4 = \square$

10 What number makes this number sentence true?

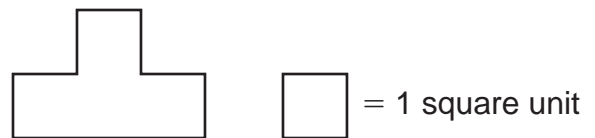
$$3 + 5 = \square \times 2$$

- A 3
- B 4
- C 5
- D 6

11 One stamp costs 34¢. Two stamps cost 68¢. Three stamps cost \$1.02. If the cost of each stamp remains the same, how much would 4 stamps cost?

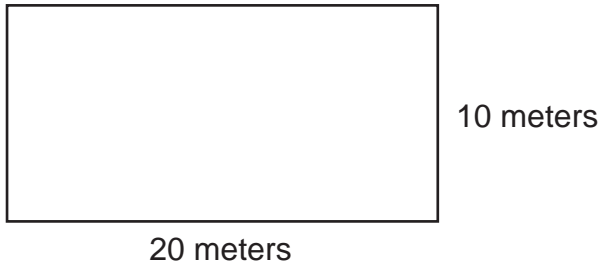
- A \$1.26
- B \$1.34
- C \$1.36
- D \$12.16

12 What is the area of this figure?



- A 2 square units
- B 3 square units
- C 4 square units
- D 6 square units

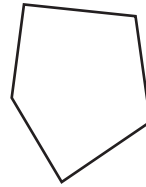
- 13** A basketball court is shaped like a rectangle 20 meters long and 10 meters wide.



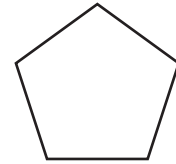
What is the perimeter in meters of the court?

- A 30 meters
- B 50 meters
- C 60 meters
- D 200 meters

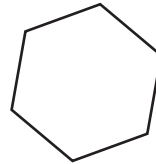
- 14** Which of these is a hexagon?



A



C

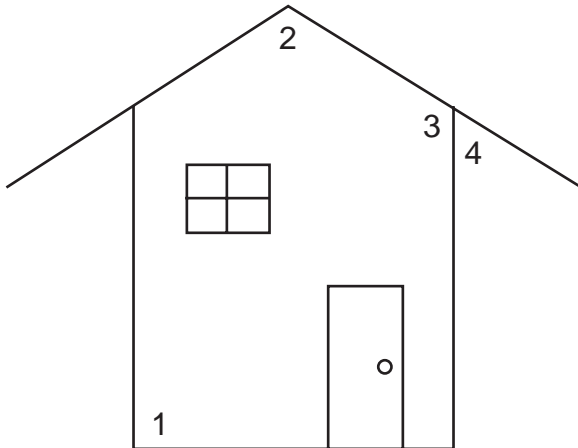


B



D

- 15** Look at the four angles marked on the picture of a house.



Which angle is a right angle?

- A angle 1
- B angle 2
- C angle 3
- D angle 4

- 16** A spinner landed on “Red” 6 times, “Blue” 4 times, and “Green” 5 times. Which tally chart shows these results?

Spin Results	
Red	
Blue	
Green	

A

Spin Results	
Red	
Blue	
Green	

C

Spin Results	
Red	
Blue	
Green	

B

Spin Results	
Red	
Blue	
Green	

D

Question Number	Correct Answer	Standard	Year of Test
1	<i>B</i>	3NS1.2	2003
2	<i>C</i>	3NS1.5	2003
3	<i>B</i>	3NS3.1	2003
4	<i>D</i>	3NS3.2	2003
5	<i>A</i>	3NS3.3	2003
6	<i>A</i>	3NS2.1	2003
7	<i>D</i>	3NS2.3	2003
8	<i>C</i>	3NS2.4	2003
9	<i>B</i>	3AF1.1	2003
10	<i>B</i>	3AF1.2	2003
11	<i>C</i>	3AF2.1	2003
12	<i>C</i>	3MG1.2	2003
13	<i>C</i>	3MG1.3	2003
14	<i>B</i>	3MG2.1	2003
15	<i>A</i>	3MG2.4	2003
16	<i>B</i>	3PS1.2	2003