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, 2004, 2005, and 2006. 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	16
Number Sense – Addition, Subtraction, Multiplication, and Division	16	15
Algebra and Functions	12	12
Measurement and Geometry	16	16
Statistics, Data Analysis, and Probability	5	5
TOTAL	65	64

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/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 16 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 15 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 = $ ___).
3NS2.5	Solve division problems in which a multi-digit number is evenly divided by a one-digit number ($135 \div 5 = $ ___).
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 12 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 ___ 3 = 12, what operational symbol goes in the blank?).
3AF1.4	Express simple unit conversions in symbolic form (e.g., _____inches = _____feet × 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 16 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 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 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*)

1 How is eight thousand, seventy-six written in standard form?

A 8067

B 8076

C 8706

D 8760

CSM20462

2 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

CSM01593

3 Which number has a 4 in the tens place and a 4 in the hundreds place?

A 6424

B 6244

C 4462

D 6442

CSM01057

4 Which digit is in the hundreds place in the number 3174?

A 1

B 3

C 4

D 7

CSM20464

5 What does the 3 represent in the number below?

3051

A 3

B 30

C 300

D 3000

CSM02188

6 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 $500 + 200 + 70$

CSM00051

7 Which number is $4000 + 80 + 5$?

A 458

B 485

C 4085

D 4805

CSM10576

8 Which number means $1000 + 600 + 8$?

A 168

B 1068

C 1608

D 1680

CSM00094

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

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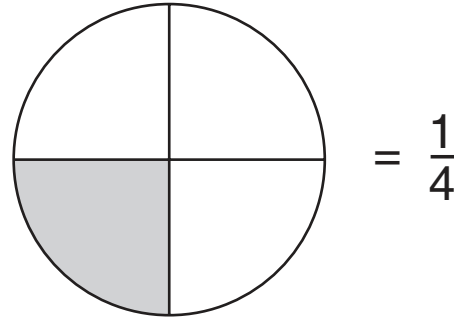
Which fractional part of a circle below is equal to $\frac{1}{4}$?

$= \frac{3}{8}$

A

$= \frac{2}{6}$

C

$= \frac{2}{8}$

B

$= \frac{1}{6}$

D
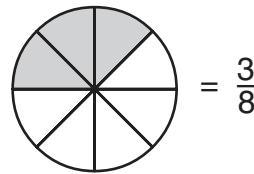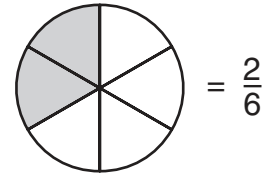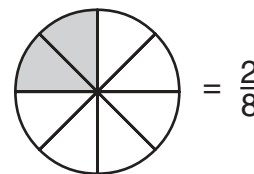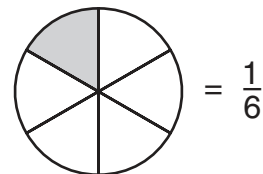
CSM02123

10

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

A $\frac{6}{6}$

B $\frac{2}{6}$

C $\frac{2}{3}$

D $\frac{3}{4}$

CSM02203

11 A pie was divided into fifths. Emily ate $\frac{1}{5}$ of the pie. Tony ate $\frac{2}{5}$ of the pie. Jenny ate $\frac{1}{5}$ of the pie. How much of the pie was left?

A $\frac{4}{5}$

B $\frac{3}{5}$

C $\frac{2}{5}$

D $\frac{1}{5}$

CSM02175

12 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

CSM02174

13 Adam has $5.00 to buy an airplane that costs $4.28. How much change should he get back?

A 70¢

B 72¢

C 75¢

D 82¢

CSM01079

14 Carmen bought these three things.

$4.10

$3.45

$1.75
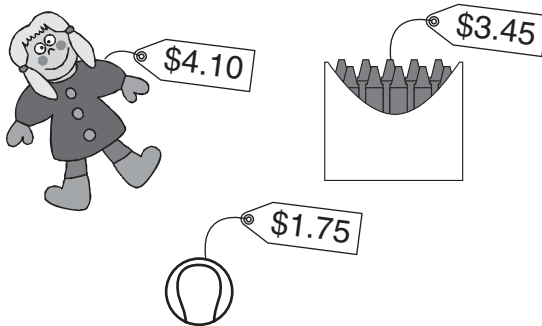
What was the total cost of these three items?

A $9.30

B $9.20

C $8.30

D $8.20

CSM02182

15 Lisa rented 4 videotapes for $4.80. How much did each tape cost to rent?

A $1.20

B $8.80

C $12.00

D $19.20

CSM20665

16 Donna shaded $\frac{1}{10}$ of the figure.
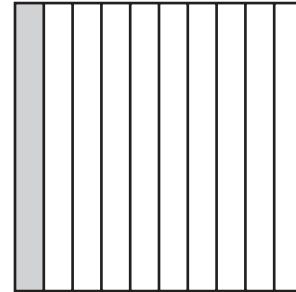
Which decimal equals $\frac{1}{10}$?

A 0.01

B 0.1

C 0.110

D 1.0

CSM01089

17 $9000 - 3782 =$

A 5218

B 5328

C 6782

D 12,782

CSM02197

18 Look at the number sentence below.

$$67 + \square = 121$$

Which number will make the number sentence true?

A 54

B 56

C 64

D 68

CSM10431

19 Which number is 6 more than 1026?

A 1022

B 1032

C 1122

D 1132

CSM10424

20 The town of Milburg has 5256 grown-ups and 2987 children. How many people live in Milburg?

A 7133

B 8133

C 8243

D 8343

CSM10580

21 The figure below is a model for the multiplication sentence.

$$8 \times 4 = 32$$
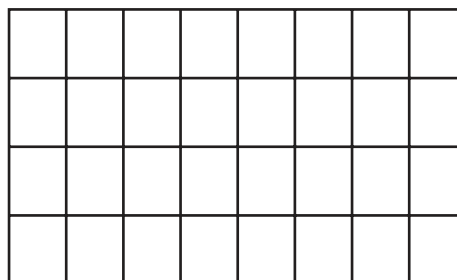
Which division sentence is modeled by the same figure?

A $8 \div 4 = 2$

B $12 \div 4 = 3$

C $24 \div 8 = 3$

D $32 \div 8 = 4$

CSM01096

22 Lily did this division problem.

$$375 \div 25 = 15$$

Which problem could she do to check her answer?

A $25 + 15 = \square$

B $25 - 15 = \square$

C $25 \times 15 = \square$

D $25 \div 15 = \square$

CSM01040

— 11 —

23 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

CSM01045

24 On Friday, 1250 people visited the zoo. Three times as many people visited on Saturday than on Friday. How many people visited the zoo on Saturday?

A 3615

B 3650

C 3750

D 3753

CSM10106

25 Third-grade students went to a concert in 8 buses. Each bus took 45 students. How many students went to the concert?

A 320

B 360

C 380

D 3240

CSM00052

26 There are 124 students making 3 stars each for the school wall. How many stars will they make all together?

A 127

B 357

C 362

D 372

CSM10687

27 How much is nine times four hundred fifty-eight?

A 4042

B 4122

C 4311

D 4589

CSM10589

28 During Field Day, 1624 students from Glen Hill School were equally divided into 8 different events. How many students were in each event?

A 203

B 206

C 221

D 224

CSM10107

29 What number can be multiplied by 5768 to give the answer 5768?

$$5768 \times \boxed{} = 5768$$

A 0

B 1

C 2

D 10

CSM10592

30 Mr. Brown bought 6 towels. All the towels were the same price. The total cost was $84. How much money did each towel cost?

A $11

B $14

C $78

D $504

CSM02134

31 Tony had $20. He paid $8 for a ticket to a baseball game. At the game, he bought a hot dog for $3. What amount of money did Tony have then?

A $5

B $9

C $11

D $15

CSM02117

32 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 $48 \times 4 = \square$

CSM02176

33 The Sumata family took a five-day vacation by car. Each day they drove 250 miles. Which number sentence could be used to find out how many total miles they drove?

A $250 + 5 = \square$

B $250 - 5 = \square$

C $250 \times 5 = \square$

D $250 \div 5 = \square$

CSM10599

34 If Mai bought apples for $2.50 and she paid with a $10 bill, which expression shows the correct amount of change?

A $10 + $2.50

B $10 - $2.50

C $10 \times $2.50

D $10 \div $2.50

CSM10097

— 13 —

35 What number makes this number sentence true?

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

A 3

B 4

C 5

D 6

CSM02121

36 What number makes this number sentence true?

$$6 \times 9 < 3 \times \square$$

A 18

B 19

C 16

D 17

CSM00425

37 Which sign goes in the box to make the number sentence true?

$$48 \square 6 = 8$$

A $+$

B $-$

C $\times$

D $\div$

CSM01071

38 Which of the following is used to find out how many inches are in 5 feet?

A 5×12

B $12 \div 5$

C $5 + 12$

D $12 - 5$

CSM20848

39 If $7 \times 11 \times 13 = 1001$, then what is $11 \times 7 \times 13$?

A 77

B 91

C 143

D 1001

CSM10058

40 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

CSM02192

41 The table shows the number of colored pencils needed for different numbers of students.

Colored Pencils

Number of Students	Number of Pencils
1	4
2	8
3	12

If each student gets the same number of pencils, how many are needed for 6 students?

A 22

B 24

C 26

D 27

CSM02194

42 If bananas cost 35¢ per pound, how much will 4 pounds cost?

A $0.39

B $1.20

C $1.29

D $1.40

CSM10690

43 Look at the linear pattern below.

3, 6, 9, 12, 15, 18, ___

What number comes next in this pattern?

A 19

B 20

C 21

D 22

CSM10046

44 **Which of the following objects is heavier than 1 pound?**
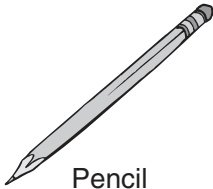
Pencil

A

Backpack

B
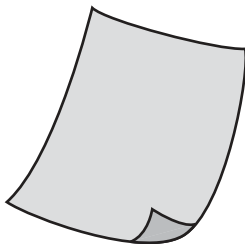
Paper

C
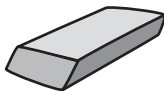
Eraser

D

CSM10440

45 **What is the area of this figure?**
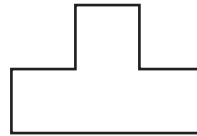
= 1 square unit

A 2 square units

B 3 square units

C 4 square units

D 6 square units

CSM01078

46 **What is the volume of this solid figure made with cubes?**
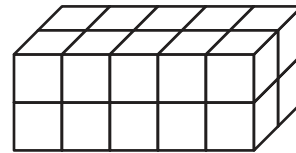
A 10 cubic units

B 17 cubic units

C 20 cubic units

D 22 cubic units

CSM01099

47 A basketball court is shaped like a rectangle 20 meters long and 10 meters wide.
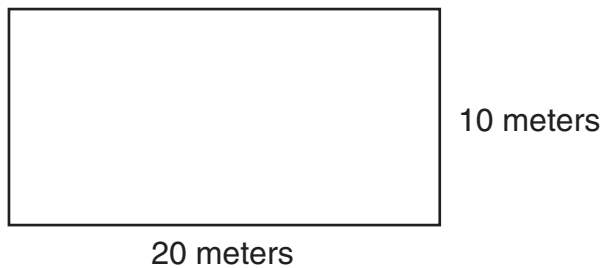
10 meters

20 meters

What is the perimeter in meters of the court?

A 30 meters

B 50 meters

C 60 meters

D 200 meters

CSM00104

48 What is the perimeter of the figure?

4 inches

5 inches

7 inches

7 inches
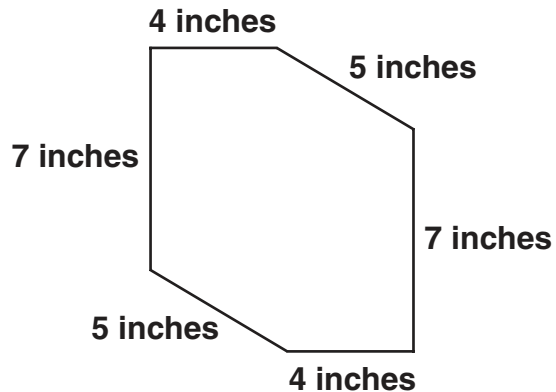
5 inches

4 inches

A 18 inches

B 22 inches

C 24 inches

D 32 inches

CSM21415

49 Look at the polygon below.

10 cm

2 cm

4 cm

1 cm

1 cm

6 cm
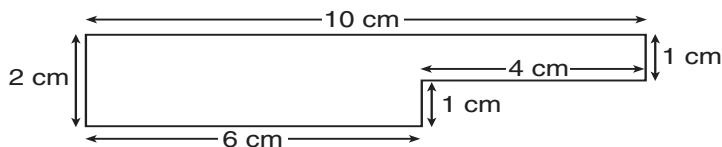
1 centimeter = 1 cm

What is the perimeter of the polygon?

A 16 cm

B 20 cm

C 24 cm

D 28 cm

CSM10447

50 There are 1,000 meters in 1 kilometer. How many meters are in 5 kilometers?

A 1,000 meters

B 50 meters

C 200 meters

D 5,000 meters

CSM00399

51 Which of these is a hexagon?
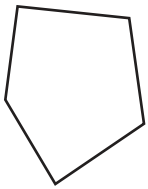
A
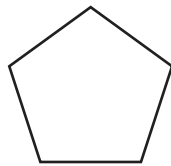
C
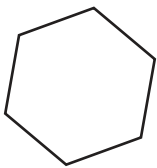
B
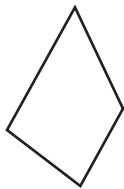
D

CSM00620

52 Which sign is shaped like a pentagon?

A

C

B

D

CSM00088

53 An isosceles triangle MUST have

A 4 sides that are the same length.

B 3 sides that are the same length.

C 2 sides that are the same length.

D no sides that are the same length.

CSM01070

— **18** —

Released Test Questions

54 **What measurement is missing on the equilateral triangle below?**
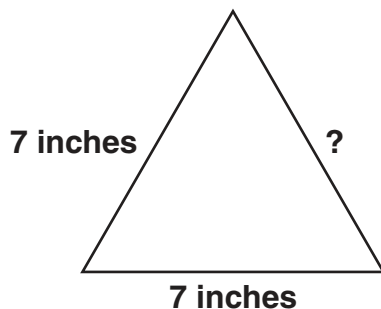
7 inches / ? / 7 inches

A 1 inch

B 7 inches

C 14 inches

D 49 inches

CSM21491

55 **One side of a rectangle is 8 feet long. Another side of the rectangle is 10 feet long. What are the lengths of the other 2 sides of the rectangle?**

A They could be any length.

B 10 feet and 8 feet

C 10 feet and 10 feet

D 8 feet and 8 feet

CSM02180

56 **How many right angles are in a rectangle?**

A 1

B 2

C 3

D 4

CSM20168

57 **Look at the four angles marked on the picture of a house.**
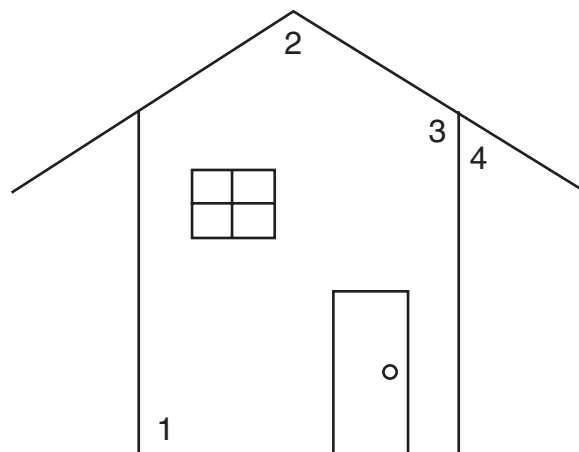
Which angle is a right angle?

A angle 1

B angle 2

C angle 3

D angle 4

CSM00108

— **19** —

58 **Which object is a cylinder?**
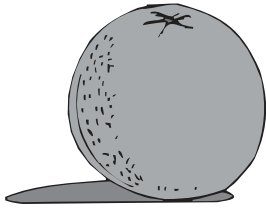
A
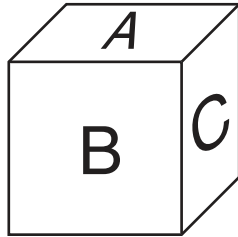
C
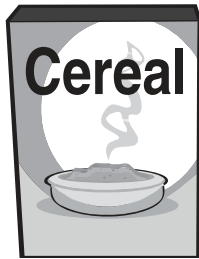
B

D

CSM10521

59 **Which shapes make up this solid object?**
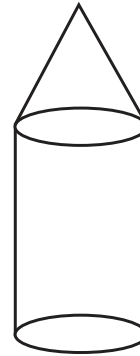
A cone and cylinder

B circle and triangle

C triangle and cylinder

D rectangle, triangle, and circle

CSM10134

60 Miriam put 10 marbles in a paper sack. Six of the marbles were black, three were gray, and one was white.
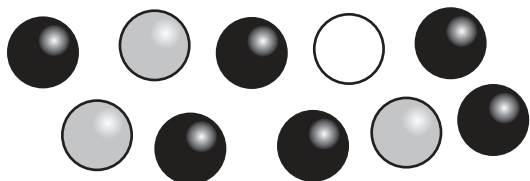
Miriam closed her eyes and took one marble out of the sack. Is it certain, likely, unlikely, or impossible that the marble she picked was white?

A certain

B likely

C unlikely

D impossible

CSM10615

61 A spinner landed on "Red" 6 times, "Blue" 4 times, and "Green" 5 times. Which tally chart shows these results?

Spin Results	
Red	⊬⊬ʜ ʃʃ
Blue	ʃʃʃʃ
Green	⊬⊬ʜ ʃ

A

Spin Results	
Red	⊬⊬ʜ
Blue	ʃʃʃʃ
Green	⊬⊬ʜ ʃ

C

Spin Results	
Red	⊬⊬ʜ ʃ
Blue	ʃʃʃʃ
Green	⊬⊬ʜ

B

Spin Results	
Red	ʃʃʃʃ
Blue	⊬⊬ʜ
Green	⊬⊬ʜ ʃ

D

CSN00095

62 **A group of children tossed a coin 10 times. The coin landed on heads 4 times and tails 6 times. Which tally chart shows these tosses?**
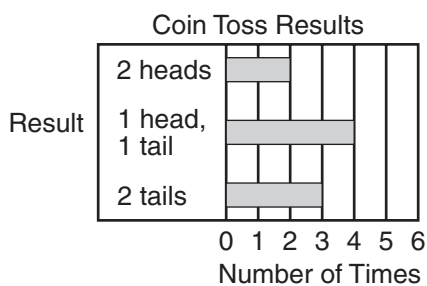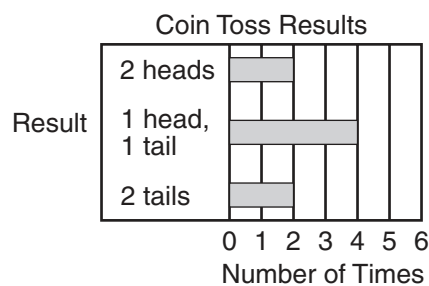
A

C

B

D
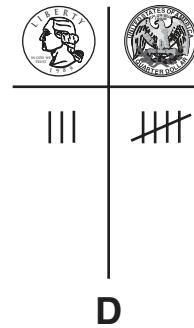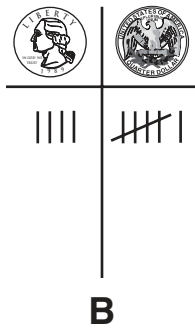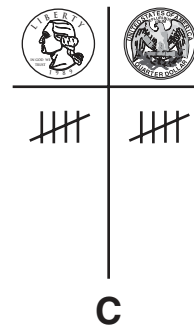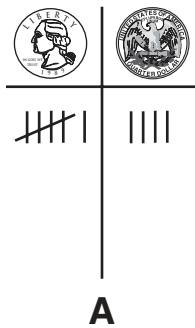
CSM10068

63 Danny tossed 2 nickels 10 times. The results are shown in the tally chart below.

Which graph shows these results?

Coin Toss Results

A

Coin Toss Results

C

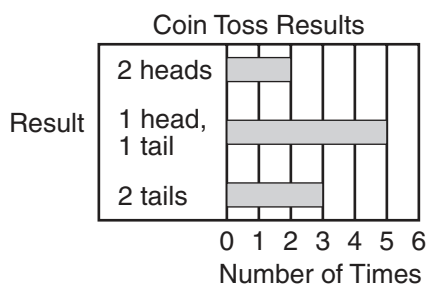Coin Toss Results

B
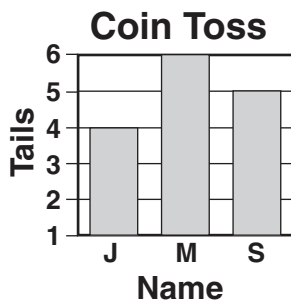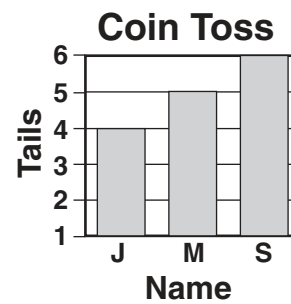
Coin Toss Results

D

CSN00330
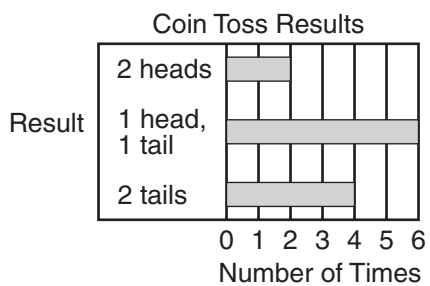
64 Josie, Mary, and Susana were tossing a coin to see how many times it would land on tails. They each tossed the coin 10 times and recorded their results with tally marks.
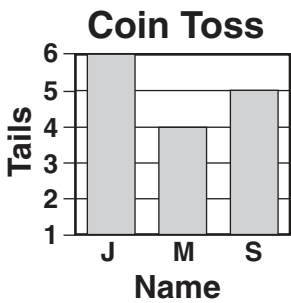
Coin Toss	
Name	**Tails**
Josie	IIII
Mary	ⅢⅠ
Susana	Ⅲ

Which graph shows their results?

A

B

C

D

CSM20866
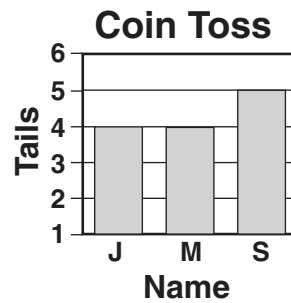
Question Number	Correct Answer	Standard	Year of Test
1	*B*	3NS1.1	2005
2	*B*	3NS1.2	2003
3	*D*	3NS1.3	2004
4	*A*	3NS1.3	2005
5	*D*	3NS1.3	2006
6	*C*	3NS1.5	2003
7	*C*	3NS1.5	2006
8	*C*	3NS1.5	2006
9	*B*	3NS3.1	2003
10	*D*	3NS3.2	2003
11	*D*	3NS3.2	2004
12	*A*	3NS3.3	2003
13	*B*	3NS3.3	2004
14	*A*	3NS3.3	2005
15	*A*	3NS3.3	2006
16	*B*	3NS3.4	2004
17	*A*	3NS2.1	2003
18	*A*	3NS2.1	2005
19	*B*	3NS2.1	2005
20	*C*	3NS2.1	2006
21	*D*	3NS2.3	2003
22	*C*	3NS2.3	2005
23	*C*	3NS2.4	2003
24	*C*	3NS2.4	2005
25	*B*	3NS2.4	2005
26	*D*	3NS2.4	2006
27	*B*	3NS2.4	2006
28	*A*	3NS2.5	2004
29	*B*	3NS2.6	2004
30	*B*	3NS2.7	2004
31	*B*	3NS2.8	2004
32	*B*	3AF1.1	2003
33	*C*	3AF1.1	2006
34	*B*	3AF1.1	2006
35	*B*	3AF1.2	2003

Question Number	Correct Answer	Standard	Year of Test
36	B	3AF1.2	2005
37	D	3AF1.3	2004
38	A	3AF1.4	2005
39	D	3AF1.5	2004
40	C	3AF2.1	2003
41	B	3AF2.1	2004
42	D	3AF2.1	2005
43	C	3AF2.2	2006
44	B	3MG1.1	2004
45	C	3MG1.2	2003
46	C	3MG1.2	2006
47	C	3MG1.3	2003
48	D	3MG1.3	2005
49	C	3MG1.3	2006
50	D	3MG1.4	2004
51	B	3MG2.1	2003
52	C	3MG2.1	2006
53	C	3MG2.2	2004
54	B	3MG2.2	2006
55	B	3MG2.3	2004
56	D	3MG2.3	2005
57	A	3MG2.4	2003
58	D	3MG2.5	2005
59	A	3MG2.6	2005
60	C	3PS1.1	2005
61	B	3PS1.2	2003
62	B	3PS1.2	2006
63	D	3PS1.3	2004
64	A	3PS1.3	2006