



New York State Testing Program

Mathematics Book 1

Grade

7

March 13–17, 2006



1

Emily earned \$25 babysitting on Friday. On Saturday she babysat for 4 hours at a rate of \$5 per hour. On Sunday she went to the store and spent \$18 on a CD. How much money did Emily have left after buying the CD?

- A \$7
- B \$12
- C \$23
- D \$27

2

What is the shape of each base of a cylinder?

- F circle
- G rectangle
- H triangle
- J square

3

Simplify the expression below.

$$2(2^3 - 2^2)$$

- A 0
- B 4
- C 8
- D 16

Go On

4 What is the least common multiple of 3, 6, and 27?

- F** 3
- G** 18
- H** 27
- J** 54

5 Lavonda learned to ride a unicycle. She practiced riding the unicycle for 25 minutes on Monday, 10 minutes on Tuesday, 22 minutes on Wednesday, 31 minutes on Thursday, and 13 minutes on Friday. What is the **range** for the data?

- A** 5 minutes
- B** 12 minutes
- C** 21 minutes
- D** 31 minutes

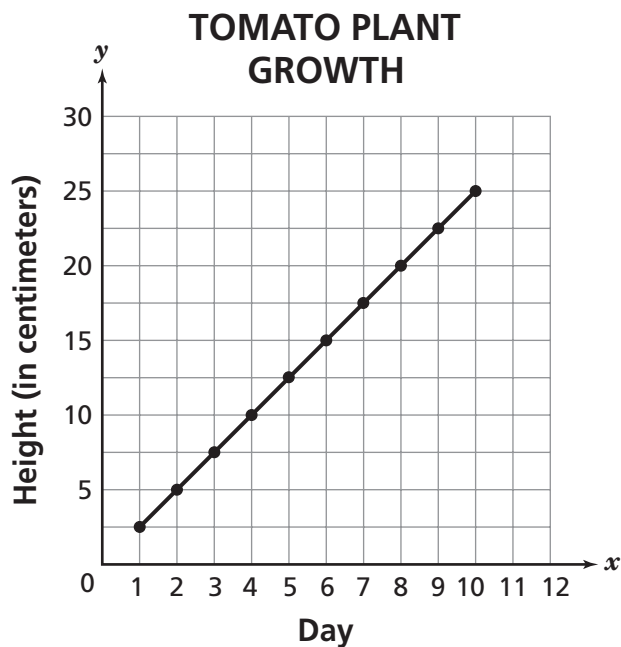
6 José fills his fish tank with water. The tank holds 250 liters of water. How many milliliters does the tank hold?

1 liter = 1,000 milliliters

- F** 25
- G** 2,500
- H** 25,000
- J** 250,000

7

The line graph below shows the growth of Terrell's tomato plant for 10 days.



How tall was the tomato plant on day 7?

- A 3 centimeters
- B 12.5 centimeters
- C 17.5 centimeters
- D 20 centimeters

Go On

8

Cindy has four more than five times as many cousins as Kathy, k . Which expression represents how many cousins Cindy has compared with Kathy?

- F** $4k + 5$
- G** $5k - 4$
- H** $5k + 4$
- J** $5k(k + 4)$

9

Simplify the expression below.

$$4 + 2^3 - |-4|$$

- A** 6
- B** 8
- C** 14
- D** 16

10

What is the greatest common factor of 28, 42, and 56?

- F** 2
- G** 7
- H** 14
- J** 28

11

Anna is a painter. She charges \$130 for paint supplies and \$25 for each hour, h , she works. Which expression represents the total amount Anna charges?

- A $(130 + 25)h$
- B $130 + 25h$
- C $130h + 25$
- D $130 + (25 + h)$

12

Heather stands in the lunch line at school. For her meal, she can choose spaghetti or pizza. She can also have apple juice, orange juice, or milk. How many different combinations of one meal and one drink can Heather choose?

- F 2
- G 3
- H 5
- J 6

13

The average distance from Pluto to the Sun is 3.65×10^9 miles. What is this number written in standard form?

- A 365,000,000
- B 3,650,000,000
- C 36,500,000,000
- D 365,000,000,000

Go On

14 Which algebraic expression represents “six less than half a number”?

F $\frac{1}{2}x - 6$

G $6 - \frac{1}{2}x$

H $\frac{1}{2}(x - 6)$

J $(6 - \frac{1}{2})x$

15 Extreme View Helicopter Tours flew 34 times on Friday. They flew the same number of times on Saturday as they did on Sunday. The total number of times they flew for the three days was 118. How many times did Extreme View Helicopter Tours fly on Saturday?

A 34

B 42

C 59

D 84

16 Jennifer makes fruit punch for her family. She prepares a total of two gallons of fruit punch. How many cups of fruit punch does she make?

1 gallon = 4 quarts 1 quart = 2 pints 1 pint = 2 cups

F 8

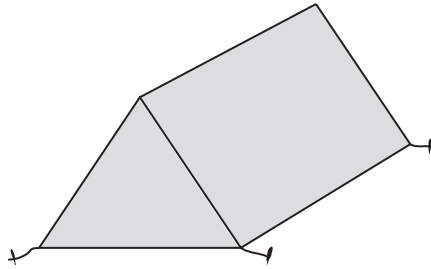
G 12

H 16

J 32

17

Richard's tent is a triangular prism, as shown below.



Which combination of shapes makes up the bases and faces of Richard's tent?

- A 2 triangles, 2 rectangles
- B 2 triangles, 3 rectangles
- C 3 triangles, 2 rectangles
- D 3 triangles, 3 rectangles

18

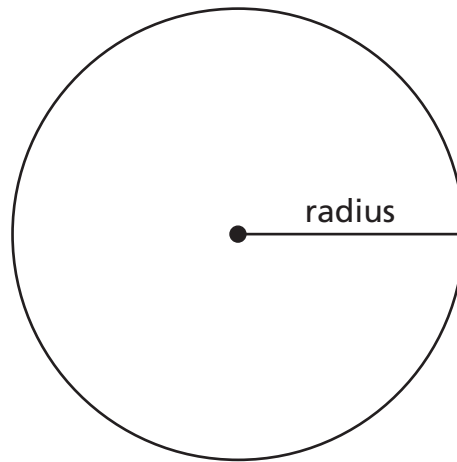
In the year 2000, approximately 169,000,000 personal computers were used in the United States. What is this number expressed in scientific notation?

- F 1.69×10^{-8}
- G 16.9×10^{-7}
- H 16.9×10^7
- J 1.69×10^8

Go On

19

The circumference of the circle below is 25.12 centimeters.



[not drawn to scale]

$$C = 2\pi r$$

Which is the best estimate for the length of the radius of the circle?

- A 3 centimeters
- B 4 centimeters
- C 8 centimeters
- D 16 centimeters

20

Which unit of measure is a metric unit for mass?

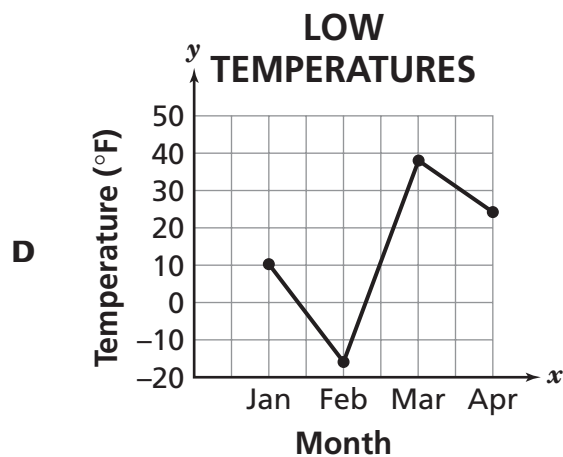
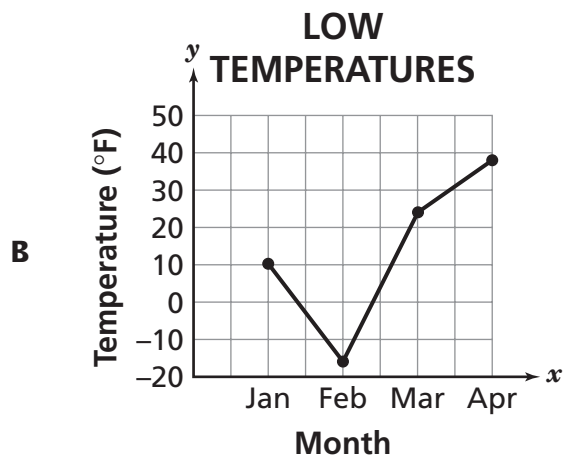
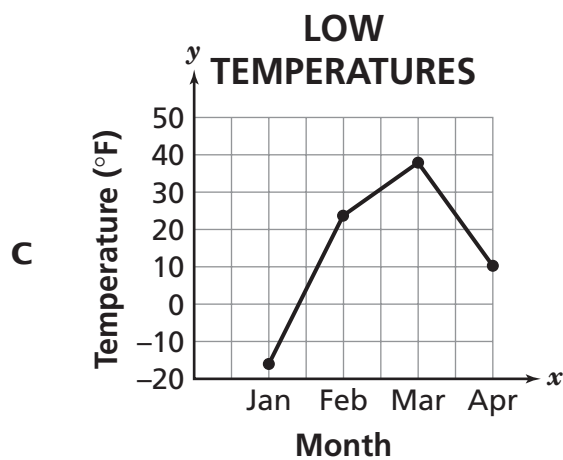
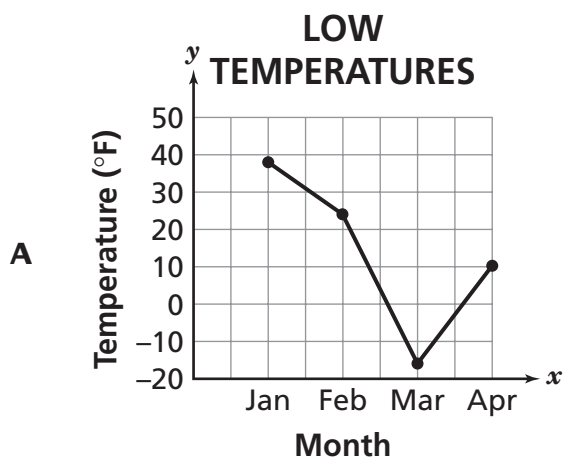
- F centimeters
- G meters
- H kilometers
- J grams

The table below shows the lowest recorded temperatures, in degrees Fahrenheit (°F), in New York each month for four months.

LOW TEMPERATURES

Month	Temperature (°F)
January	10
February	-16
March	24
April	38

Which line graph correctly displays the data?



22 Between what two whole numbers is $\sqrt{89}$?

- F** 7 and 8
- G** 8 and 9
- H** 9 and 10
- J** 10 and 11

23 Marcus buys three notebooks for school. Each notebook is the same price. Marcus uses a coupon that is worth \$2 off his total purchase. He pays a total of \$7 with the coupon. Which equation can be used to find the cost of one notebook, n ?

- A** $3n - 2 = 7$
- B** $3n + 2 = 7$
- C** $3(n - 2) = 7$
- D** $3(n + 2) = 7$

24 Ellen buys 24 ounces of green beans at the grocery store. The green beans cost \$1.90 per pound. How much does she pay for the green beans, before tax?

1 pound = 16 ounces

- F** \$1.90
- G** \$2.53
- H** \$2.85
- J** \$3.80

25

Keisha has one penny, one nickel, and one dime in her pocket. She randomly takes one coin out of her pocket. Without putting it back, she randomly takes out another coin. If Keisha lists all the possible outcomes of picking the two coins one at a time, how many outcomes are there?

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

26

The table below shows the attendance at a skating rink during the first 4 months of this year.

SKATING RINK ATTENDANCE

Month	Number of People
January	1,450
February	1,502
March	1,631
April	1,688
May	?

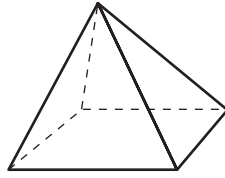
Based on the data in the table, which is the **best** prediction for how many people skated at the skating rink in May?

- F 1,400
- G 1,600
- H 1,800
- J 2,000

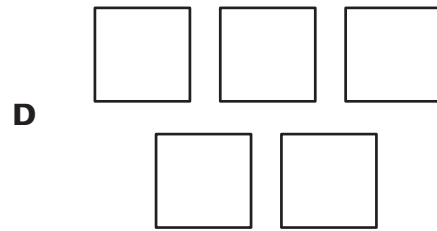
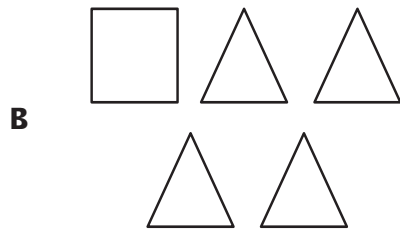
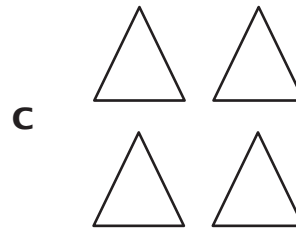
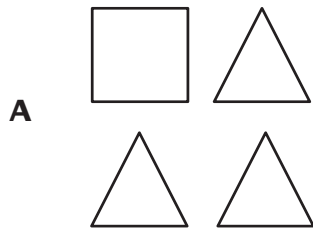
Go On

27

A rectangular pyramid is shown below.



Which combination of shapes makes up the bases and faces of the rectangular pyramid?

**28**

Ming wrote the four numbers below in scientific notation.

5.5×10^5

1.2×10^3

2.8×10^6

7.4×10^2

Which number has the greatest value?

F 5.5×10^5

G 1.2×10^3

H 2.8×10^6

J 7.4×10^2

29

A circle has a circumference that measures 18π inches. What is the radius, in inches, of the circle?

$$C = 2\pi r$$

- A 6
- B 9
- C 18
- D 36

30

Karen surveyed students in one middle school about their favorite band. Of the 1,156 students in the middle school, 65 sixth-grade students were surveyed. More than half of the 65 students said their favorite band is Rhonda and the Gees. Based on the survey, Karen says most middle school students' favorite band is Rhonda and the Gees. Why is Karen's statement incorrect?

- F Karen surveyed too many students.
- G Karen's survey sample was too small.
- H Karen did not survey any high school students.
- J Karen did not include enough bands in the survey.

STOP

31

Tyler surveys his classmates to determine the number and type of pets they have. The frequency table below shows this data.

PETS

Type of Pet	Number
Fish	
Hamster	
Cat	
Dog	

Based on the data, which type of graph is **best** to display Tyler's data?

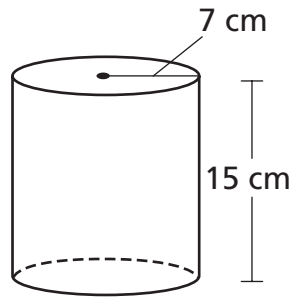
Answer _____

On the lines below, explain why the graph you chose is **best** to display Tyler's data.

Go On

32

Joel draws a picture of his cylinder shown below.



[not drawn to scale]

Calculate the volume of Joel's cylinder. Round your answer to the nearest tenth.

Show your work.

Answer _____ cubic centimeters

33

A youth organization raised \$15,336 by selling gift baskets. Five different teams sold the baskets. Martin's team sold 48 baskets, Amy's team sold 138 baskets, Sharon's team sold 77 baskets, Juan's team sold 250 baskets, and Dee's team sold 126 baskets.

Part A

Each gift basket was the same price. What was the price of one gift basket?

Show your work.

Answer \$ _____

Part B

What is the difference between the amount of money raised by the team that sold the greatest number of gift baskets and the amount of money raised by the team that sold the least number of gift baskets?

Show your work.

Answer \$ _____

Go On



Use your protractor to help you solve this problem.

Josh plans to discuss this year's 7th-grade class budget at the next student council meeting. He decides to display the budget data below in a circle graph.

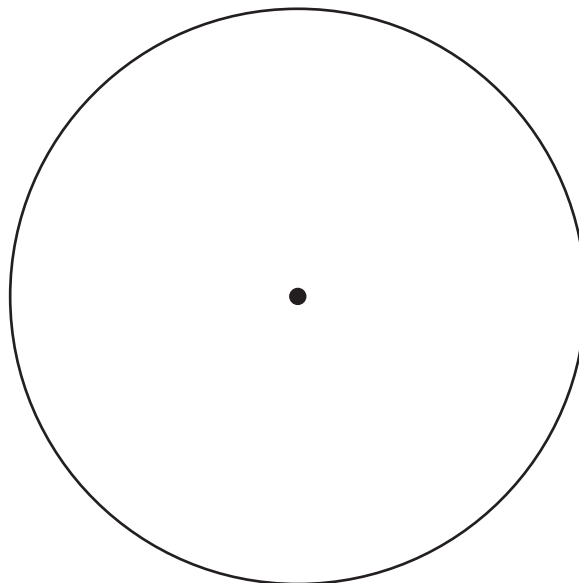
7TH-GRADE CLASS BUDGET

Category	Percent of Budget
Newsletter	15%
Supplies	20%
Special activities	55%
Other expenses	10%

Using your protractor, create a circle graph below by displaying and labeling each of the four budget categories.

Show your work.

7TH-GRADE CLASS BUDGET



35

Sunshine Airline requires each suitcase to weigh 31.75 kilograms or less before it can go onto the airplane. Trisha's suitcase weighs 3,620 grams before it is packed. What is the maximum amount of weight, in kilograms, Trisha can pack in her suitcase and still be allowed to bring her suitcase onto the airplane?

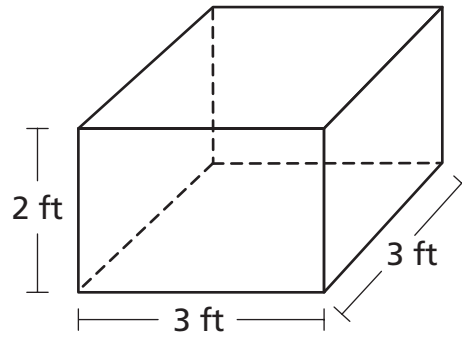
Show your work.

Answer _____ kilograms

Go On

36

Rashid needs to buy some wood to build a box. He must calculate the surface area of the box to determine how much wood to buy. A diagram of the box is shown below.



[not drawn to scale]

How much wood does Rashid need to buy to build the box?

Show your work.

Answer _____ square feet

37

The list below shows the number of students who participate in football and track at Farrell Middle School.

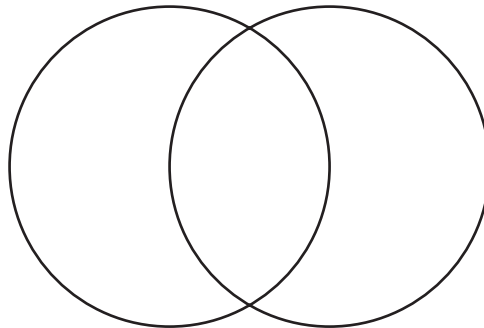
- A total of 33 students participate in football.
- A total of 24 students participate in track.
- There are 8 students who participate in both sports.

Part A

Use the list above to complete the Venn diagram in the space below.

Be sure to

- title the diagram
- label each circle
- place a number in each section of the diagram



Part B

What is the total number of students who participate in these sports?

Answer _____ students

Go On

The population of Los Angeles, California, throughout the 20th century is shown in the table below.

POPULATION OF LOS ANGELES

Year	Population (in millions)
1900	0.1
1920	0.6
1940	1.1
1960	1.8
1980	2.3
2000	2.8

Between which 2 years did the population increase the most?

Answer between _____ and _____

Based on the data in the table, predict the population of Los Angeles in the year 2020. Justify your prediction on the lines below.

STOP

**Strand and Performance Indicator Map with Answer Key
2006 Grade 7 Mathematics**

Question	Type	Points	Strand	Content Performance Indicator	Answer Key
Book 1					
1	Multiple Choice	1	Number Sense and Operations	7N12	D
2	Multiple Choice	1	Geometry	7G3	F
3	Multiple Choice	1	Number Sense and Operations	7N11	C
4	Multiple Choice	1	Number Sense and Operations	7N9	J
5	Multiple Choice	1	Statistics and Probability	7S4	C
6	Multiple Choice	1	Measurement	7M2	J
7	Multiple Choice	1	Statistics and Probability	7S6	C
8	Multiple Choice	1	Algebra	7A1	H
9	Multiple Choice	1	Number Sense and Operations	7N11	B
10	Multiple Choice	1	Number Sense and Operations	7N8	H
11	Multiple Choice	1	Algebra	7A1	B
12	Multiple Choice	1	Statistics and Probability	6S11	J
13	Multiple Choice	1	Number Sense and Operations	7N6	B
14	Multiple Choice	1	Algebra	7A1	F
15	Multiple Choice	1	Number Sense and Operations	7N12	B
16	Multiple Choice	1	Measurement	7M2	J
17	Multiple Choice	1	Geometry	7G3	B
18	Multiple Choice	1	Number Sense and Operations	7N5	J
19	Multiple Choice	1	Geometry	7G1	B
20	Multiple Choice	1	Measurement	7M3	J
21	Multiple Choice	1	Statistics and Probability	7S6	B
22	Multiple Choice	1	Number Sense and Operations	7N18	H
23	Multiple Choice	1	Algebra	6A3	A

**Strand and Performance Indicator Map with Answer Key
Grade 7 Mathematics (continued)**

Question	Type	Points	Strand	Content Performance Indicator	Answer Key
Book 1					
24	Multiple Choice	1	Measurement	7M4	H
25	Multiple Choice	1	Statistics and Probability	6S9	D
26	Multiple Choice	1	Statistics and Probability	7S8	H
27	Multiple Choice	1	Geometry	7G3	B
28	Multiple Choice	1	Number Sense and Operations	7N7	H
29	Multiple Choice	1	Geometry	7G1	B
30	Multiple Choice	1	Statistics and Probability	7S9	G
Book 2					
31	Short Response	2	Statistics and Probability	6S4	n/a
32	Short Response	2	Geometry	7G2	n/a
33	Extended Response	3	Number Sense and Operations	7N12	n/a
34	Extended Response	3	Measurement	7M8	n/a
35	Short Response	2	Measurement	7M4	n/a
36	Short Response	2	Geometry	7G4	n/a
37	Extended Response	3	Statistics and Probability	6S3	n/a
38	Extended Response	3	Statistics and Probability	7S8	n/a