Question 1 in this sampler is to be solved without the use of a calculator.

MULTIPLE-CHOICE ITEMS

1. Divide: $18 \div \frac{1}{12}$

A. $\frac{2}{3}$

B. $1\frac{1}{2}$

C. 30

D. 216

PSSA MATHEMATICS GRADE 5

Question 1 in this sampler is to be solved without the use of a calculator.

MULTIPLE-CHOICE ITEMS

2 Subtract: $7\frac{1}{2} - \frac{2}{3}$

A. $2\frac{1}{6}$

B. $3\frac{5}{6}$

C. $6\frac{5}{6}$

D. $7\frac{1}{6}$

A calculator is permitted for use in solving questions 2–17 in this sampler.

3 Jon rides his bike 0.23 mile. Angie rides her bike 100 times as far as Jon rides. How many miles does Angie ride her bike?

A. 2.3

B. 23

C. 230

D. 2,300

4 Joe writes a number with a 3 in the tenths place. Ellie also writes a number with a 3 as a digit. The value of the 3 in Ellie's number is 10 times the value of the 3 in Joe's number. Which number could be the one Ellie wrote?

A. 324.67

B. 423.67

C. 426.37

D. 426.73

5 The chart below shows the number of rocking chairs a factory made in the first three months of a year and the number of rocking chairs that the factory shipped for each of those months.

Rocking Chair Factory

Month	Number of Rocking Chairs Made	Number of Rocking Chairs Shipped
January	4,228	2,987
February	3,165	4,000
March	3,784	3,985

How many rocking chairs that were made in the first three months of the year remain to be shipped?

A. 201

B. 205

C. 1,241

D. 2,277

6 A number is multiplied by 4, then divided by 2, and finally multiplied by 0.5. How does the result compare to the original number?

A. The result is the same as the original number.

B. The result is four times the value of the original number.

C. The result is one-fourth the value of the original number.

D. The result cannot be compared to the original number without knowing the original number.

PSSA MATHEMATICS GRADE 5

7 An inequality is shown below.

$$4.205 < \_\_\_\_\_$$

Which number could be placed into the blank to make the inequality true?

A. four and twenty-four hundredths

B. four and twenty-seven thousandths

C. four and two hundred five thousandths

D. four and two hundred four thousandths

8 An expression is shown below.

$$5 \times 1\frac{1}{12}$$

Which has the same value as the expression?

A. $5 + \left(1 + \frac{1}{12}\right)$

B. $(1 + 1 + 1 + 1 + 1) + \left(\frac{1}{12}\right)$

C. $1 + \left(\frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12}\right)$

D. $(1 + 1 + 1 + 1 + 1) + \left(\frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12}\right)$

9. The expression below shows two fractions being added.

$$\frac{7}{12}+\frac{1}{18}$$

Which expression could be used to find the sum of the two fractions?

A. $\frac{5}{6}+\frac{2}{6}+\frac{1}{6}+\frac{1}{6}+\frac{1}{6}$

B. $\frac{5}{30}+\frac{1}{30}+\frac{1}{30}+\frac{1}{30}$

C. $\frac{15}{36}+\frac{6}{36}+\frac{1}{36}+\frac{1}{36}$

D. $\frac{30}{72}+\frac{12}{72}+\frac{2}{72}+\frac{1}{72}$

10. Dai cooks 54 cups of soup at his restaurant. He serves an equal share of all 54 cups of soup to each of 24 customers. How many cups of soup is each customer served?

A. $\frac{3}{10}$

B. $\frac{4}{9}$

C. $1\frac{1}{4}$

D. $2\frac{1}{4}$

11. Tanya makes a paper volcano in science class. She spends $\frac{1}{3}$ hour building the base, $\frac{1}{6}$ hour shaping the cone, and $\frac{1}{8}$ hour painting the outside. How many hours does Tanya spend making the volcano?

A. $\frac{1}{8}$

B. $\frac{3}{17}$

C. $\frac{5}{8}$

D. $\frac{15}{17}$

12 Cereal boxes are arranged on three different shelves in a grocery store.

- The top shelf is $42\frac{1}{2}$ inches in length and $14\frac{2}{5}$ inches in width.
- The middle shelf is $1\frac{2}{5}$ times the length of the top shelf and $1\frac{1}{2}$ times the width of the top shelf.
- The bottom shelf is $\frac{4}{5}$ times the length of the middle shelf and $\frac{3}{4}$ times the width of the middle shelf.

What are the length and the width of the bottom shelf?

A. length: $47\frac{3}{5}$ inches
width: $12\frac{3}{20}$ inches

B. length: $47\frac{3}{5}$ inches
width: $16\frac{1}{5}$ inches

C. length: $58\frac{7}{10}$ inches
width: $20\frac{17}{20}$ inches

D. length: $59\frac{1}{2}$ inches
width: $21\frac{3}{5}$ inches

13. Priya has two pieces of fabric.

- One piece is $\frac{8}{12}$ foot in length.
- The other piece is $\frac{3}{12}$ foot in length.

Priya uses $\frac{9}{12}$ foot of the fabric to make a pillowcase. How many feet of fabric does Priya have remaining?

A. $\frac{1}{6}$

B. $\frac{1}{3}$

C. $\frac{11}{12}$

D. $1\frac{1}{6}$

14 The value of the expression shown below is 7.5.

$$0.75(2 + 6 \times 4 - 2 \times 7 - 2)$$

Each 2 in the expression is changed to a 3 to make a new expression. What is the difference in the values of the expressions?

A. 1

B. 5.25

C. 8.5

D. 22.5

15 Two expressions are described below.

expression R: multiply 35 by $\frac{6}{5}$

expression S: multiply 35 by $\frac{3}{4}$

Based on the descriptions, which statement is true?

A. The value of expression R is greater than 35 because $\frac{6}{5} < 1$.

B. The value of expression R is greater than 35 because $\frac{6}{5} > 1$.

C. The value of expression S is greater than 35 because $\frac{3}{4} < 1$.

D. The value of expression S is greater than 35 because $\frac{3}{4} > 1$.

16. What is the value of the expression $[(5 + 3) \times 6] \div 2$?

A. 11.5

B. 13

C. 14

D. 24

17 Which calculation is represented by the expression $(5 + 2) \div 9$?

A. divide five by nine, then add two

B. divide two by nine, then add five

C. divide the sum of five and two by nine

D. divide nine by the sum of five and two

18 The first four terms in a pattern are shown below.

$$\frac{3}{4}, \quad 1\frac{1}{4}, \quad 1\frac{3}{4}, \quad 2\frac{1}{4}$$

The pattern continues. What is the tenth term in the pattern?

A. $5\frac{1}{4}$

B. $5\frac{3}{4}$

C. $10\frac{1}{4}$

D. $10\frac{3}{4}$

19 During his free time last week, Javon read a book and played outside. At the end of each day, Javon recorded the total number of hours he had spent so far that week doing each activity. The data Javon recorded for the last four days of the week are shown in the table below.

Javon's Free Time

End of Day	Read a Book (hours)	Played Outside (hours)
Wednesday	8	12
Thursday	10	15
Friday	12	18
Saturday	14	21

Based on the patterns in the table, which statement is true?

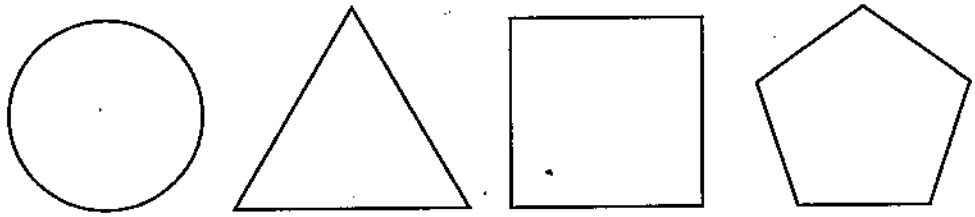
A. For every hour Javon read a book, he played outside for 1.5 hours.

B. For every hour Javon played outside, he read a book for 1.5 hours.

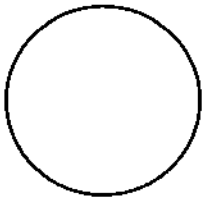
C. For every hour Javon read a book, he played outside for 3 hours.

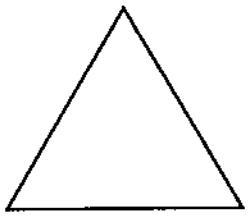
D. For every hour Javon played outside, he read a book for 3 hours.

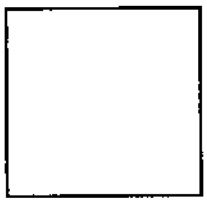
20 The four shapes shown below repeat to form a pattern.

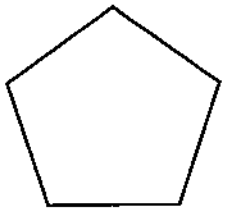


The pattern continues. What is the 67th shape in the pattern?

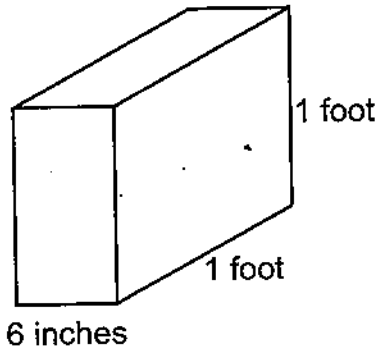
A. 

B. 

C. 

D. 

21. A company uses boxes with the dimensions shown below. The width is in **inches**. The length and height are in **feet**.



What is the volume, in **cubic inches**, of each box?

A. 6 cubic inches
B. 72 cubic inches
C. 600 cubic inches
D. 864 cubic inches

22. The first six terms in pattern A and pattern B are shown below.

pattern A:	0,	2,	4,	6,	8,	10
pattern B:	0,	10,	20,	30,	40,	50

The patterns continue. Which statement about corresponding terms in the patterns is true?

A. Each term in pattern A is $\frac{1}{5}$ of the corresponding term in pattern B.

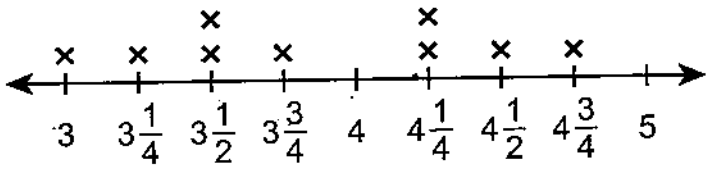
B. Each term in pattern A is $\frac{1}{2}$ of the corresponding term in pattern B.

C. Each term in pattern A is always less than the corresponding term in pattern B.

D. Each term in pattern A is equal to or 8 less than the corresponding term in pattern B.

23 The line plot below shows the number of hours Mr. Jacobson spent writing for each of the last nine days.

Mr. Jacobson's Writing Time



Hours

What is the total number of hours Mr. Jacobson spent writing over the last nine days?

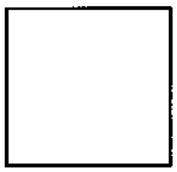
A. 31

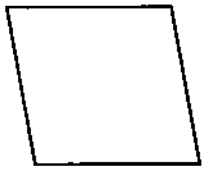
B. $31\frac{6}{13}$

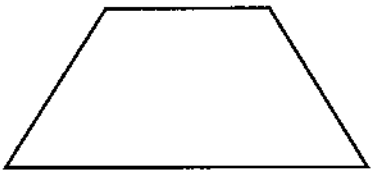
C. $34\frac{3}{4}$

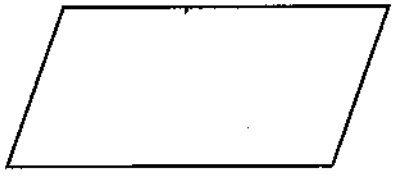
D. 35

24 Jabari has a quilt made from pieces of fabric that are all parallelograms. Which shape would **not** be found on Jabari's quilt?

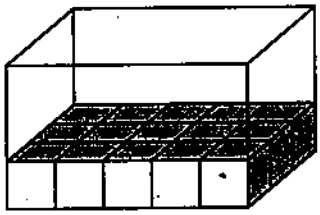
A. 

B. 

C. 

D. 

25 The bottom of the rectangular prism shown below is covered by 1-inch cubes.



The height of the prism is 3 inches. Which statement explains how to determine the volume, in cubic inches, of the rectangular prism?

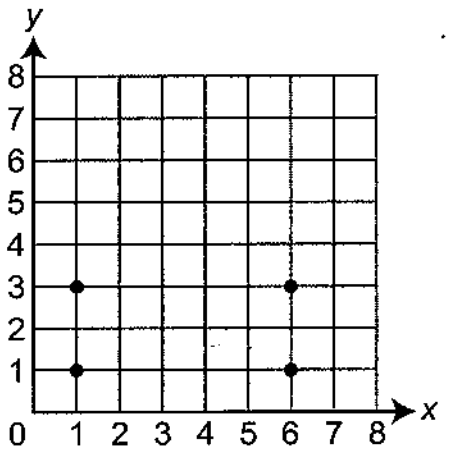
A. Add two more layers of the number of cubes in the bottom layer: 15 + 15 + 15.

B. Multiply the number of cubes in the bottom layer two more times: 15 × 15 × 15.

C. Add 3 to the number of cubes in the length and width of the bottom layer: 3 + 5 + 3.

D. Multiply the number of cubes in the bottom layer by the length and width of the bottom layer: 15 × 5 × 3.

26 A scientist puts stakes into the ground at the locations of the plotted points shown on the coordinate grid below.



The scientist connects the stakes with string to form a rectangle before digging for objects in the ground. The scientist finds one object inside the rectangle and one object outside the rectangle. At which two locations could the objects have been found?

A. (2, 2) and (5, 2)

B. (4, 2) and the origin

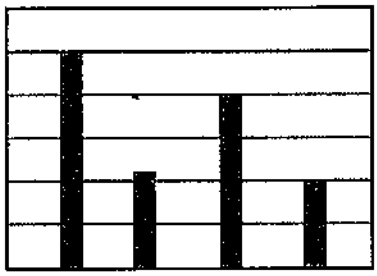
C. (3, 0) and the point with an *x*-coordinate of 1 and a *y*-coordinate of 5

D. (3, 2) and the point with a *y*-coordinate of 2 and an *x*-coordinate of 5

27 A bar graph is shown below, but some of the information is missing.

Title: _____

A: _____



B: _____

Which title and axis labels would be **most** appropriate for the graph?

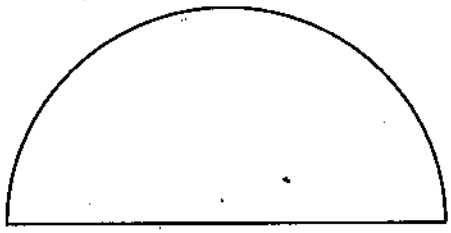
A. Title: Leo's Plants
A: Type of Plant
B: Average Height (inches)

B. Title: Airplane Elevation
A: Elevation (feet)
B: Time since Start (minutes)

C. Title: Voting Results
A: Number of Voters
B: Candidate

D. Title: Movie Tickets
A: Number of Tickets
B: Total Cost ($)

28. A shape is shown below.



Which statement about the shape is true?

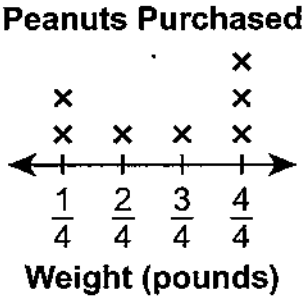
A. The shape is a polygon because it is closed.

B. The shape is a polygon because it has one straight side.

C. The shape is **not** a polygon, because it is closed.

D. The shape is **not** a polygon, because it has one curved side.

29. The line plot below shows the weights, in pounds, of peanuts purchased by 7 customers at a grocery store.



What is the combined weight, in pounds, of the peanuts purchased by the 7 customers?

A. $\frac{5}{8}$

B. $1\frac{3}{4}$

C. $2\frac{1}{2}$

D. $4\frac{3}{4}$

30 Sonja rakes leaves for $3\frac{1}{4}$ **hours**. For how many **minutes** does Sonja rake leaves?

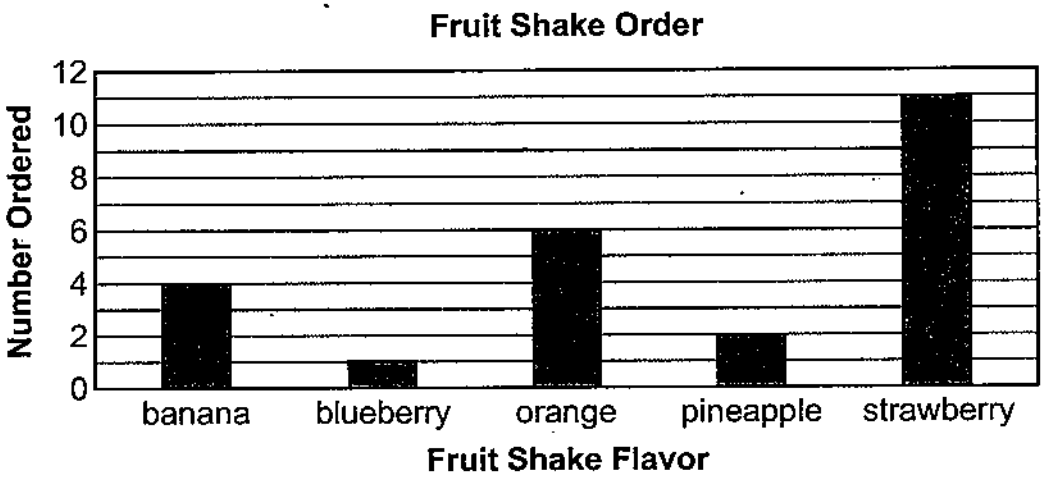
A. $63\frac{1}{4}$ minutes

B. $180\frac{1}{4}$ minutes

C. 195 minutes

D. 225 minutes

31 Each of the students in Ms. Steven's class orders a fruit shake. The bar graph below shows the number of fruit shakes of each flavor the students order.



Which two fruit shake flavors are ordered by exactly half of the students in Ms. Steven's class?

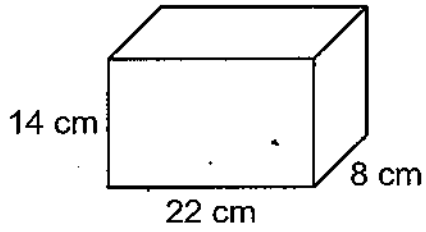
A. banana and orange

B. banana and pineapple

C. blueberry and strawberry

D. orange and strawberry

32 A metal container is shaped like a rectangular prism. The dimensions of the container are shown below.



The container is completely filled with a liquid mixture. There is an equal amount of each of the 3 liquids in the mixture. What is the volume of each liquid in the container?

A. $14\frac{2}{3}$ cm^3

B. $91\frac{7}{27}$ cm^3

C. $273\frac{7}{9}$ cm^3

D. $821\frac{1}{3}$ cm^3

OPEN-ENDED QUESTION

33 Mitch is making some bread dough.

To make the bread dough, Mitch uses $5\frac{1}{2}$ cups of wheat flour, $1\frac{3}{4}$ cups of rice flour, and $\frac{2}{3}$ cup of white flour.

A. How many cups of flour, in total, does Mitch use? Show or explain all your work.

Go to the next page to finish question 17.

GO ON

33 ***Continued.*** Please refer to the previous page for task explanation.

Mitch decides that the next time he makes the bread dough he would use only $4\frac{1}{2}$ cups of wheat flour. He would also increase the amounts of rice flour and white flour so that the total amount of flour he used stayed the same. He plans to increase the rice flour and the white flour by the same amount.

B. How many cups of rice flour and white flour will Mitch use the next time he makes the bread dough? Show or explain all your work.

rice flour: _____

white flour: _____

After you have checked your work, close your answer booklet and test booklet so your teacher will know you are finished.

OPEN-ENDED QUESTION

34. Derek rode his bike several times last week.

On Monday, Derek rode his bike for 0.355×10^2 minutes.

A. Write the standard form for the number of minutes Derek rode his bike on Monday.

On Thursday, the number of minutes Derek rode his bike is shown below.

$$(4 \times 10) + (5 \times 1) + \left(8 \times \frac{1}{100}\right) + \left(2 \times \frac{1}{1{,}000}\right)$$

B. Write the word form for the number of minutes Derek rode his bike on Thursday.

Go to the next page to finish question 17.

GO ON

34. ***Continued.*** Please refer to the previous page for task explanation.

On Saturday, Derek rode his bike 5.2409 miles. Derek rounds this distance to the nearest hundredth and gets 5.25 miles. Derek is incorrect.

C. Explain the correct way to round 5.2409 to the nearest hundredth using place value concepts. As part of your explanation, include the correctly rounded distance, to the nearest hundredth mile, Derek rode his bike.

After you have checked your work, close your answer booklet and test booklet so your teacher will know you are finished.