Mathematical Process Standards

1A	apply mathematics to problems arising in everyday life, society, and the workplace;
1B	use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;
1C	select tools, including real objects, manipulatives, paper/pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;
1D	communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;
1E	create and use representations to organize, record, and communicate mathematical ideas;
1F	analyze mathematical relationships to connect and communicate mathematical ideas; and
1G	display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication

Number and Operations (Place Value, Comparing and Ordering Decimals, and Rounding Decimals)

2A	represent the value of the digit in decimals through the thousandths using expanded notation and numerals;
2B★	compare and order two decimals to thousandths and represent comparisons using the symbols >, <, or =; and
2C	round decimals to tenths or hundredths.

Number and Operations (Whole Numbers, Fractions, and Decimals)

3A	estimate to determine solutions to mathematical and real-world problems involving addition, subtraction, multiplication, or division;
3B	multiply with fluency a three-digit number by a two-digit number using the standard algorithm;
3C	solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies and the standard algorithm;
3D	represent multiplication of decimals with products to the hundredths using objects and pictorial models, including area models;
3E★	solve for products of decimals to the hundredths, including situations involving money, using strategies based on place-value understandings, properties of operations, and the relationship to the multiplication of whole numbers;
3F	represent quotients of decimals to the hundredths, up to four-digit dividends and two-digit whole number divisors, using objects and pictorial models, including area models;
3G★	solve for quotients of decimals to the hundredths, up to four-digit dividends and two-digit whole number divisors, using strategies and algorithms, including the standard algorithm;
3H	represent and solve addition and subtraction of fractions with unequal denominators referring to the same whole using objects and pictorial models and properties of operations;
3I	represent and solve multiplication of a whole number and a fraction that refers to the same whole using objects and pictorial models, including area models;
3J	represent division of a unit fraction by a whole number and the division of a whole number by a unit fraction such as 1/3 ÷ 7 and 7 ÷ 1/3 using objects and pictorial models, including area models;
3K★	add and subtract positive rational numbers fluently; and
3L★	divide whole numbers by unit fractions and unit fractions by whole numbers.

Algebraic Reasoning (Primes and Composites, Multi-step Problems, Patterns, Simplifying Expressions, Perimeter, Area, and Volume)

4A	identify prime and composite numbers;
4B★	represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity;
4C★	generate a numerical pattern when given a rule in the form $y = ax$ or $y = x + a$ and graph;
4D	recognize the difference between additive and multiplicative numerical patterns given in a table or graph;
4E	describe the meaning of parentheses and brackets in a numeric expression;
4F★	simplify numerical expressions that do not involve exponents, including up to two levels of grouping;
4H★	represent and solve problems related to perimeter and/or area and related to volume.

Geometry and Measurement (Classifying Figures)

5A★	classify two-dimensional figures in a hierarchy of sets and subsets using graphic organizers based on their attributes and properties.

Geometry and Measurement (Determining Volume)

6A	recognize a cube with side length of one unit as a unit cube having one cubic unit of volume and the volume of a three-dimensional figure as the number of unit cubes (*n* cubic units) needed to fill it with no gaps or overlaps if possible; and
6B	determine the volume of a rectangular prism with whole number side lengths in problems related to the number of layers times the number of unit cubes in the area of the base.

Geometry and Measurement (Customary and Metric Conversions)

7A	solve problems by calculating conversions within a measurement system, customary or metric.

Geometry and Measurement (Coordinate Planes and Graphing Ordered Pairs)

8A	describe the key attributes of the coordinate plane, including perpendicular number lines (axes) where the intersection (origin) of the two lines coincides with zero on each number line and the given point (0, 0); the *x*-coordinate, the first number in an ordered pair, indicates movement parallel to the *x*-axis starting at the origin; and the *y*-coordinate, the second number, indicates movement parallel to the *y*-axis starting at the origin;
8B	describe the process for graphing ordered pairs of numbers in the first quadrant of the coordinate plane; and
8C★	graph in the first quadrant of the coordinate plane ordered pairs of numbers arising from mathematical and real-world problems, including those generated by number patterns or found in an input-output table.

Data Analysis (Bar Graphs, Frequency Tables, Dot Plots, Stem-And-Leaf Plots, and Scatterplots)

9A	represent categorical data with bar graphs or frequency tables and numerical data, including data sets of measurements in fractions or decimals, with dot plots or stem-and-leaf plots;
9B	represent discrete paired data on a scatterplot; and
9C★	solve one- and two-step problems using data from a frequency table, dot plot, bar graph, stem-and-leaf plot, or scatterplot.

Personal Financial Literacy

10A	define income tax, payroll tax, sales tax, and property tax;
10B	explain the difference between gross income and net income;
10E	describe actions that might be taken to balance a budget when expenses exceed income; and
10F	balance a simple budget.

Blackout is the goal! After completing and checking a page of your *Countdown*, shade the oval of each question you answer correctly. The ovals that are not shaded show you and your teacher which standards you need to work on. Shade carefully, accurately, and neatly!

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Series 2

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Series 4

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Page 3

1 (9C) 5 (5A)
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Page 4

1 (3G) 5 (2B)
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Series 5

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2 (6B) 6 (2B)
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Page 5

1 (4H) 5 (4C)
2 (3K)
3 (3I)
4 (3F)

Page 6

1 (3E) 5 (9B)
2 (3K)
3 (2B)
4 (3G)

1 A water tank contains 2,130 gallons of water. Each hour, 30 gallons of water will drain from the tank until it is empty. How long will it take to empty the tank?

A 69 hours
B 75 hours
C 73 hours
D 71 hours

3C

3 Ezekiel has 2 candy bars. He will eat $\frac{1}{4}$ of a candy bar each day. How many days will it take Ezekiel to eat both candy bars?

F 6 **G** 16 **H** 8 **J** 2

3L

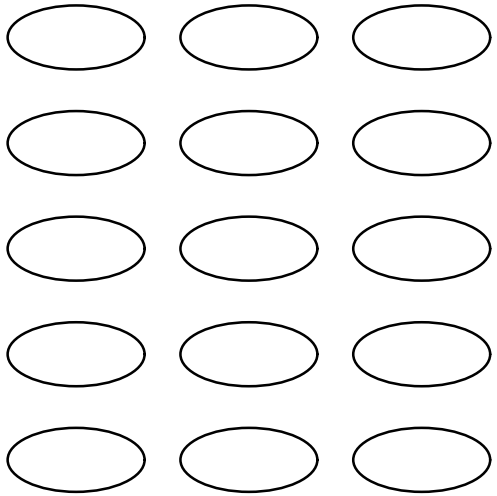
5 Which statement about a coordinate grid is true?

A The *x*-coordinate is the first number in an ordered pair.
B The *x*-axis and the *y*-axis are parallel to each other.
C The *x*-axis and the *y*-axis intersect at the ordered pair (1, 1).
D The vertical number line is the *x*-axis.

8A

2 In the model shown, select the number of ovals that represents the product of $\frac{3}{5}$ and 15.

Select the ovals you want to shade.

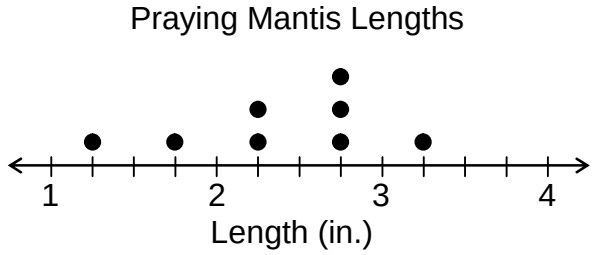


3I

4 Jagrav measured the lengths of 10 praying mantises that he found in his garden. He made this table to display the information.

Praying Mantis	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Length (in.)	$2\frac{1}{4}$	$2\frac{3}{4}$	$1\frac{3}{4}$	$3\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{3}{4}$	$1\frac{1}{4}$	$3\frac{1}{2}$	2	$2\frac{3}{4}$

Jagrav is making the dot plot shown to display the data. Which two data points does Jagrav need to add to the dot plot?



Choose the correct answer from each drop-down menu to complete the sentence.

Jagrav still needs to add one dot to [ ] and one dot to [ ].

- ☐ 1 ½
- ☐ 2
- ☐ 2 ½

- ☐ 3
- ☐ 3 ¼
- ☐ 3 ½

9A

1 Which expression has a value of 7?

A $(3 \times 7) \div 7$

B $(2 \times 7) \div (21 \div 3)$

C $(2 \times 42) \div (3 \times 4)$

D $(4 \times 8) \div (2 \times 2)$

4F

2 The three figures shown are rectangular prisms composed of unit cubes.

Figure I

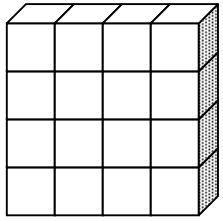


Figure II

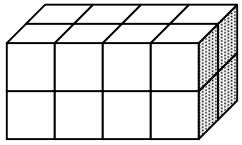
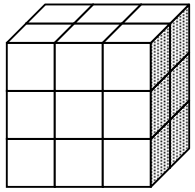


Figure III



Which figures have a volume of 16 cubic units?

F Figures I, II, and III

G Figures II and III only

H Figures I and II only

J Figures I and III only

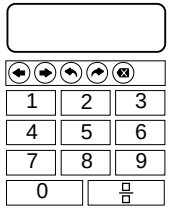
6A

3 The length in centimeters of a pencil is shown in expanded notation.

$(1 \times 10) + (7 \times 1) + (2 \times 0.1) + (5 \times 0.01)$

What is this length in centimeters written as a numeral?

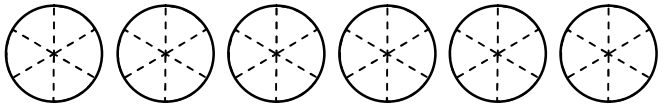
Enter your answer in the box.



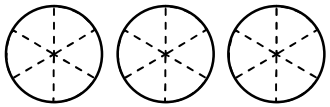
2A

5 Tanner wrote the expression $3 \div \frac{1}{6}$. Which model represents the expression?

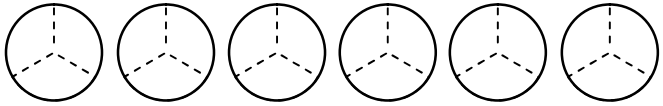
F



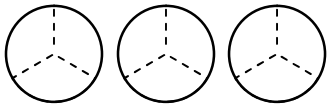
G



H

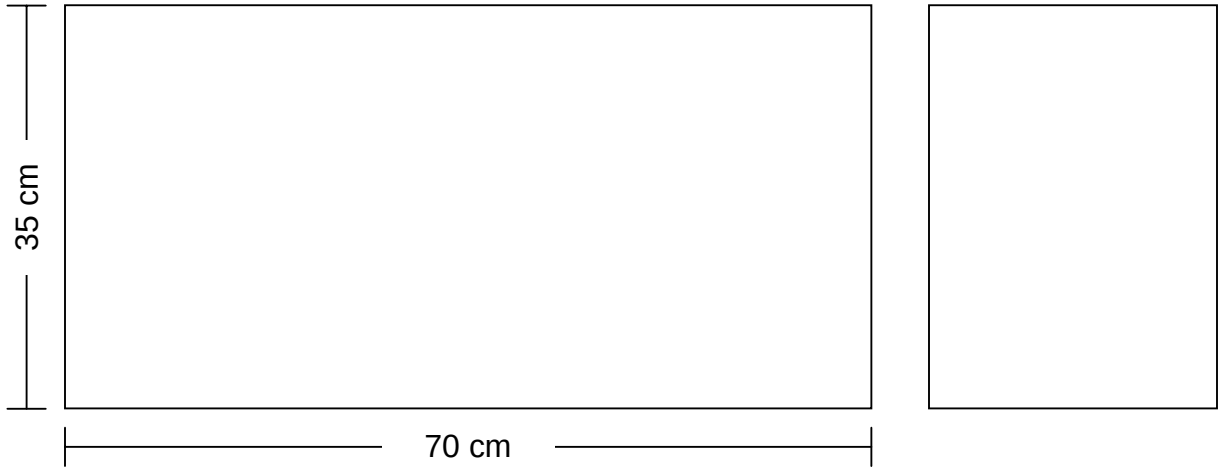


J



3J

4 The combined perimeter of the two rectangles below is 330 cm. The model shows only the dimensions of the larger rectangle.



What is the perimeter of the smaller rectangle?

A 170 cm **B** 140 cm **C** 100 cm **D** 120 cm

4H

1 Mr. Ramos pays $1.55 each time he uses a toll road. What is the total amount of money Mr. Ramos pays to use the toll road 12 times?

A $18.60 **C** $46.50

B $13.55 **D** $19.50

3E

2 The stem and leaf plot shows the number of bookmarks that a group of students made for a fundraiser.

Stem	Leaf
0	7 8
1	0 2 5
2	1 3
3	2 5 5 6
4	0
5	3 6 7
6	2
7	0
8	5

8|5 means 85 bookmarks

What is the difference between the number of students who made more than 40 bookmarks and the number of students who made fewer than 20 bookmarks?

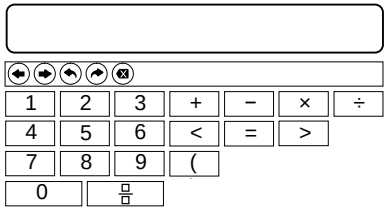
F 5 **G** 2 **H** 6 **J** 1

9C

3 The table shows the masses of three bricks.

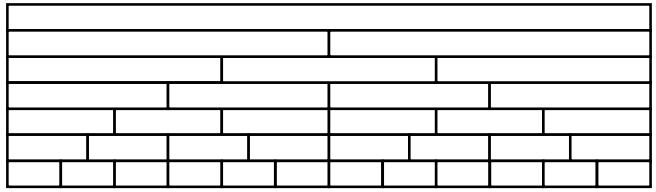
Brick	Mass
A	1.85 kg
B	1.9 kg
C	1.849 kg

Use the symbols >, <, or = to compare two of the numbers of kilograms.

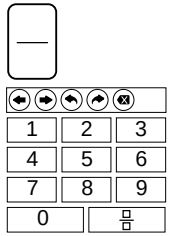


2B

5 Damonte will use the fraction strips shown below to help him find the sum of $\frac{1}{4}$ and $\frac{2}{6}$.

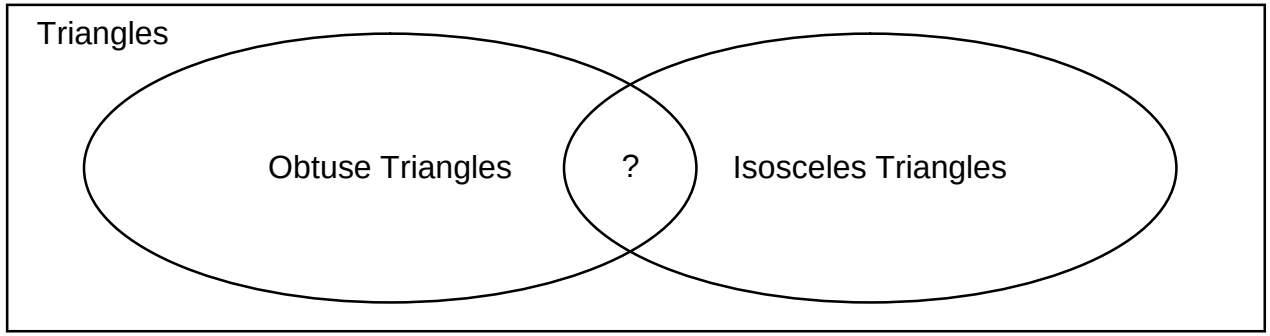


What is $\frac{1}{4} + \frac{2}{6}$? *Enter your answer in the box.*



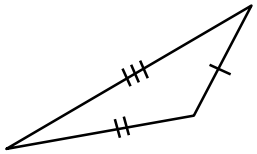
3H

4 The Venn diagram shows the relationship between some kinds of triangles.

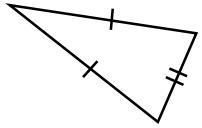


Which triangle belongs in the intersection of *Isosceles Triangles* and *Obtuse Triangles*?

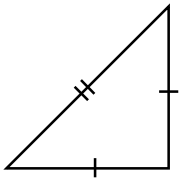
A



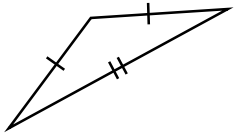
B



C

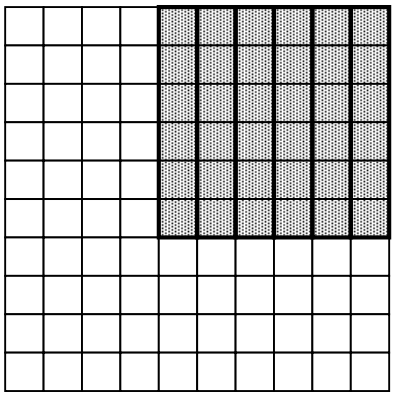


D



5A

1 The hundredths model is shaded to represent a division problem.



Which equation is represented by the model?

A 0.36 ÷ 6 = 0.05

B 0.36 ÷ 6 = 6

C 0.36 ÷ 6 = 0.06

D 0.36 ÷ 6 = 5

3F

2 Mr. Price earned $82,500 last year working as a mechanic. He paid the federal government $13,292 in taxes on the money he earned. The money Mr. Price paid the government is an example of which kind of tax?

F Sales tax **G** Property tax **H** Income tax **J** None of these

10A

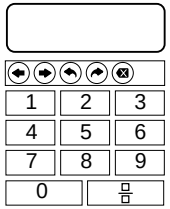
3 A truck delivered 48 cases of drinks to a gas station. Each case contained 24 drinks. The drinks were placed in rows in the cooler. There were 16 drinks in each row. Which equation can be used to find *r*, the number of rows the drinks were placed in?

A 48 × 24 ÷ 16 = *r* **C** 48 ÷ 16 + 24 = *r*

B 48 × 24 – 16 = *r* **D** 24 × 16 ÷ 24 = *r*

4B

4 A baker made a cake that had a mass of 2.7 kilograms. The cake was cut into 6 pieces of equal mass. What was the mass in kilograms of each piece of cake?



3G

5 The leaky faucet in Bianca's sink drips 2 pints of water each day. How many fluid ounces is this?

F 8 fl oz **H** 24 fl oz

G 12 fl oz **J** 32 fl oz

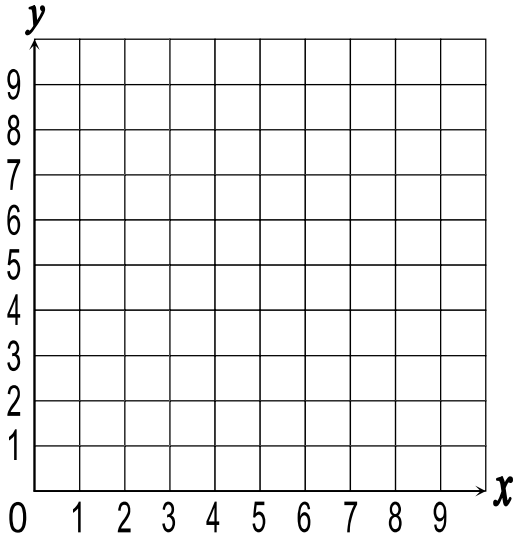
7A

6 A table of ordered pairs is shown.

x	*y*
0	0.5
2	2
4	3.5
6	5

Select four points on the coordinate grid that represent the ordered pairs in the table.

Plot each point on the coordinate grid.



8C

1 A silversmith used 4.32 ounces of silver to make 24 earrings. Each earring had the same weight. What was the weight of each earring?

A 1.08 oz **C** 0.018 oz
B 1.8 oz **D** 0.18 oz

3G

2 A bush in Edgar's yard was $5\frac{1}{2}$ feet tall. Edgar trimmed $\frac{7}{8}$ foot off the top. How many feet tall was the bush after Edgar trimmed it?

F $4\frac{5}{8}$ ft **H** $4\frac{3}{4}$ ft
G $5\frac{5}{8}$ ft **J** $4\frac{3}{8}$ ft

3K

3 Indira bought a video game for $19.75, a controller for $31.99, and tablet cover for $15.15. Which is the best estimate of the total amount of money Indira paid for the three items?

A $60 **B** $70 **C** $80 **D** $50

3A

4 The values in the table represent the equation $y = 2x$. Complete the table to represent the relationship between the values of x and y.

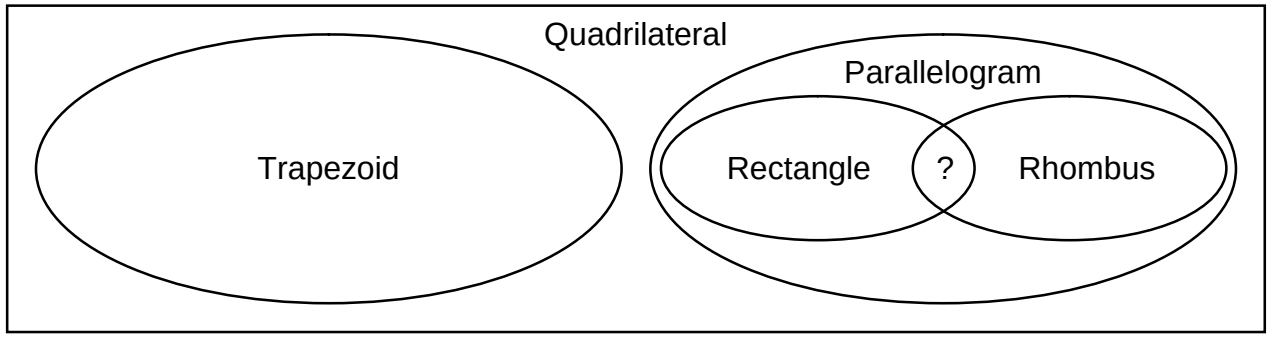
Move the correct answer to each box in the table. Not all answers will be used.

5.5	13.5	7.5
23	7	13

x	y
3.5	
	15
11.5	

4C

5 A graphic organizer for classifying quadrilaterals is shown.

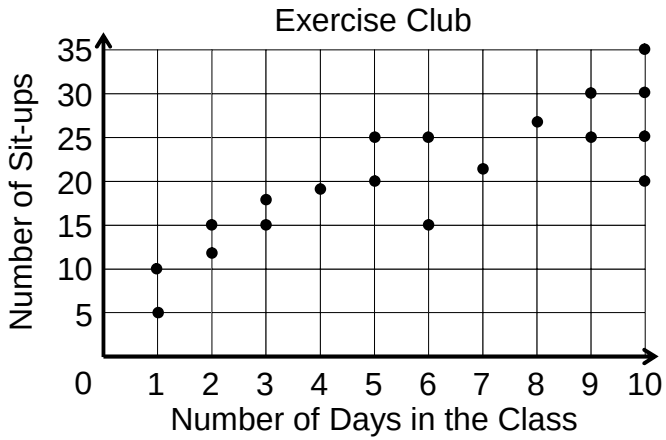


Which term belongs in the intersection of *Rectangle* and *Rhombus*?

F Hexagon **G** Polygon **H** Square **J** None of these

5A

6 The scatterplot shows the number of sit-ups each student in an exercise class performed in one minute and the number of days the student has participated in the exercise class.



What is the total number of sit-ups performed by the students who have participated in the club for 9 or 10 days?

A 165 **B** 150 **C** 145 **D** 170

9C

1 A sequence of numbers is shown. The box represents a missing number in the sequence.

3.795, 4.005, ☐, 4.035

Which number can be written in the box to make the sequence of numbers in order from least to greatest?

A 4.15 **C** 4.03

B 4.002 **D** 4.037

2B

2 A hat box in the shape of a rectangular prism has a length of 16 inches, a width of 10 inches, and a height of 12 inches. What is the volume of the hat box?

F 480 cubic inches

G 1,920 cubic inches

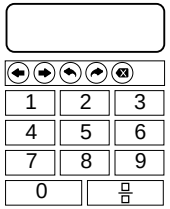
H 1,870 cubic inches

J None of these

4H

3 Nuwa's kitten ate 0.7 ounces of food. Her puppy ate 6 times as much. How many ounces of food did Nuwa's puppy eat?

Enter your answer in the box.



3E

4 Lasonya poured a total of $\frac{1}{2}$ gallon of water into 4 cups. She poured the same amount of water into each cup. How much water did Lasonya pour into each cup?

A $\frac{1}{2}$ gallon **C** 2 gallons

B 8 gallons **D** $\frac{1}{8}$ gallon

3L

5 What is 1.736 rounded to the tenths place?

F 1.10 **G** 1.74 **H** 2.0 **J** 1.7

2C

6 Yesterday Mr. Graham earned a total of $294 selling hats and shirts at his souvenir shop.

- He sold 9 shirts for $21 each.
- He sold 7 hats.

The equation shown can be used to find *h*, the amount of money in dollars Mr. Graham earned for each hat he sold.

$$[294 - (9 \times 21)] \div 7 = h$$

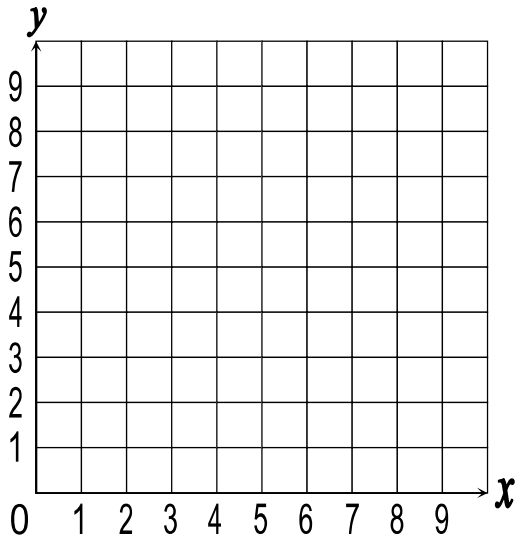
How much money did Mr. Graham earn for selling each hat?

A $12 **B** $267 **C** $15 **D** $18

4B

7 Candela plotted the following ordered pairs on a coordinate grid.

(2, 3) (2, 6) (7, 3) (7, 6)



Candela connected the points with line segments to form a quadrilateral. Which point is located outside the perimeter of the quadrilateral?

F (3, 4) **G** (4, 2) **H** (4, 5) **J** (6, 4)

8C