

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, Compare and Order, Rounding, Relating Decimals and Fractions)

2A	interpret the value of each place-value position as ten times the position to the right and as one-tenth of the value of the place to its left;
2B★	represent the value of the digit in whole numbers through 1,000,000,000 and decimals to the hundredths using expanded notation and numerals;
2C	compare and order whole numbers to 1,000,000,000 and represent comparisons using the symbols $>$, $<$, or $=$;
2D	round whole numbers to a given place value through the hundred thousands place;
2E	represent decimals, including tenths and hundredths, using concrete and visual models and money;
2F	compare and order decimals using concrete and visual models to the hundredths;
2G★	relate decimals to fractions that name tenths and hundredths; and
2H	determine the corresponding decimal to the tenths or hundredths place of a specified point on a number line.

Number and Operations (Fractions and Decimals)

3A	represent a fraction a/b as a sum of fractions $1/b$, where a and b are whole numbers and $b > 0$, including when $a > b$;
3B	decompose a fraction in more than one way into a sum of fractions with the same denominator using concrete and pictorial models and recording results with symbolic representations;
3C	determine if two given fractions are equivalent using a variety of methods;
3D★	compare two fractions with different numerators and different denominators and represent the comparison using the symbols $>$, $=$, or $<$;
3E★	represent and solve addition and subtraction of fractions with equal denominators using objects and pictorial models that build to the number line and properties of operations;
3F	evaluate the reasonableness of sums and differences of fractions using benchmark fractions 0, $1/4$, $1/2$, $3/4$, and 1, referring to the same whole; and
3G	represent fractions and decimals to the tenths or hundredths as distances from zero on a number line.

Number and Operations (Computation and Rounding)

4A★	add and subtract whole numbers and decimals to the hundredths place using the standard algorithm;
4B	determine products of a number and 10 or 100 using properties of operations and place value understandings;
4C	represent the product of 2 two-digit numbers using arrays, area models, or equations, including perfect squares through 15×15 ;
4D	use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;
4E	represent the quotient of up to a four-digit whole number divided by a one-digit whole number using arrays, area models, or equations;
4F	use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor;

4G	round to the nearest 10, 100 or 1,000 or use compatible numbers to estimate solutions involving whole numbers; and
4H★	solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders.

Algebraic Reasoning

5A★	represent multistep problems involving the four operations with whole numbers using strip diagrams and equations with a letter standing for the unknown quantity;
5B★	represent problems using an input-output table and numerical expressions to generate a number pattern that follows a given rule representing the relationship of the values in the resulting sequence and their position in the sequence;
5C	use models to determine the formulas for the perimeter of a rectangle ($l + w + l + w$ or $2l + 2w$), including the special form for perimeter of a square ($4s$) and the area of a rectangle ($l \times w$); and
5D★	solve problems related to perimeter and area of rectangles where dimensions are whole numbers.

Geometry and Measurement (Lines, Symmetry, and Angles)

6A	identify points, lines, line segments, rays, angles, and perpendicular and parallel lines;
6B	identify and draw one or more lines of symmetry, if they exist, for a two-dimensional figure;
6C	apply knowledge of right angles to identify acute, right and obtuse triangles;
6D★	classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size.

Geometry and Measurement (Measuring Angles)

7A	illustrate the measure of an angle as the part of a circle whose center is at the vertex of the angle that is “cut out” by the rays of the angle. Angle measures are limited to whole numbers;
7B	illustrate degrees as the units used to measure an angle, where $1/360$ of any circle is 1 degree and an angle that “cuts” $n/360$ out of any circle whose center is at the angle’s vertex has a measure of n degrees. Angle measures are limited to whole numbers;
7C★	determine the approximate measures of angles in degrees to the nearest whole number using a protractor;
7D	draw an angle with a given measure; and
7E	determine the measure of an unknown angle formed by two non-overlapping adjacent angles given one or both angle measures.

Geometry and Measurement (Units of Measurement)

8A	identify relative sizes of measurement units within the customary and metric systems;
8B	convert measurements within the same measurement system, customary or metric, from a smaller unit into a larger unit or a larger unit into a smaller unit when given other equivalent measures represented in a table; and
8C★	solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate.

Data Analysis (Tables and Plots)

9A★	represent data on a frequency table, dot plot or stem and leaf plot marked with whole numbers and fractions; and
9B	solve one- and two-step problems using data in whole number, decimal, and fraction form in a frequency table, dot plot, or stem and leaf plot.

Personal Financial Literacy

10A	distinguish between fixed and variable expenses;
10B	calculate profit in a given situation;
10C	compare the advantages and disadvantages of various savings options;
10D	describe how to allocate a weekly allowance among spending; saving, including for college; and sharing; and
10E	describe the basic purpose of financial institutions, including keeping money safe, borrowing money, and lending.

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!

Series 1

Page 1

- 1 (5B)
- 2 (3G)
- 3 (4F)
- 4 (9A)

Page 2

- 1 (6A) 5 (6D)
- 2 (3D)
- 3 (2C)
- 4 (10B)

Page 3

- 1 (5D) 5 (2A)
- 2 (4H) 6 (2G)
- 3 (7C)
- 4 (5A)

Page 4

- 1 (10A) 5 (4B)
- 2 (3D)
- 3 (7D)
- 4 (2B)

Page 5

- 1 (2G) 5 (9A)
- 2 (6D) 6 (8C)
- 3 (4A)
- 4 (8A)

Page 6

- 1 (2B) 5 (3E)
- 2 (4G) 6 (6C)
- 3 (4H)
- 4 (5D)

Series 2

Page 1

- 1 (8B) 5 (4C)
- 2 (6D)
- 3 (5A)
- 4 (9B)

Page 2

- 1 (3F) 5 (8C)
- 2 (7E)
- 3 (10E)
- 4 (9A)

Page 3

- 1 (3E) 5 (9A)
- 2 (4B) 6 (2G)
- 3 (4H)
- 4 (3A)

Page 4

- 1 (6B) 5 (7C)
- 2 (4A)
- 3 (3D)
- 4 (5D)

Page 5

- 1 (2D) 5 (2F)
- 2 (6A)
- 3 (6D)
- 4 (2B)

Page 6

- 1 (5D) 5 (5B)
- 2 (3D) 6 (4E)
- 3 (4A)
- 4 (2B)

Series 3

Page 1

- 1 (2G) 5 (9A)
- 2 (8A) 6 (4A)
- 3 (6C)
- 4 (4H)

Page 2

- 1 (4H) 5 (5A)
- 2 (6B) 6 (7C)
- 3 (2E)
- 4 (6D)

Page 3

- 1 (3B) 5 (4A)
- 2 (9B) 6 (2G)
- 3 (4D)
- 4 (7D)

Page 4

- 1 (5D)
- 2 (10A)
- 3 (2H)
- 4 (9A)

Page 5

- 1 (3D) 5 (3E)
- 2 (4G)
- 3 (2B)
- 4 (8C)

Page 6

- 1 (6D) 5 (2B)
- 2 (5D)
- 3 (3F)
- 4 (5B)

Series 4

Page 1

- 1 (10B) 5 (4H)
- 2 (4E)
- 3 (4G)
- 4 (9A)

Page 2

- 1 (3D) 5 (5D)
- 2 (9A)
- 3 (5B)
- 4 (7E)

Page 3

- 1 (3D) 5 (4B)
- 2 (4A) 6 (2G)
- 3 (6C)
- 4 (3G)

Page 4

- 1 (6A) 5 (2B)
- 2 (4H)
- 3 (4C)
- 4 (10E)

Page 5

- 1 (5D) 5 (8C)
- 2 (5A)
- 3 (3E)
- 4 (4A)

Page 6

- 1 (2G) 5 (7C)
- 2 (2A) 6 (6D)
- 3 (3B)
- 4 (8B)

Series 5

Page 1

- 1 (9B) 5 (6D)
- 2 (3B)
- 3 (3F)
- 4 (7D)

Page 2

- 1 (3D) 5 (5B)
- 2 (10B)
- 3 (6B)
- 4 (2B)

Page 3

- 1 (4D) 5 (7C)
- 2 (3E)
- 3 (8B)
- 4 (5D)

Page 4

- 1 (4H) 5 (9A)
- 2 (2G) 6 (4C)
- 3 (2B)
- 4 (5A)

Page 5

- 1 (8C) 5 (9A)
- 2 (8A)
- 3 (4A)
- 4 (2C)

Page 6

- 1 (4A) 5 (5D)
- 2 (4H) 6 (6D)
- 3 (2D)
- 4 (2G)

1 The table shows a relationship between input numbers and output numbers.

Input	Output
4	1
8	2
12	3
16	4

Which rule can be used to find the output number when the input number is given?

- A** $\div 4$ **B** $\div 3$ **C** $- 3$ **D** $\times 4$

5B

3 Roland was awarded 595 XP after completing 7 levels of a video game. He earned the same number of XP for each level. How many XP was Roland awarded for completing each level?

Enter your answer in the box.

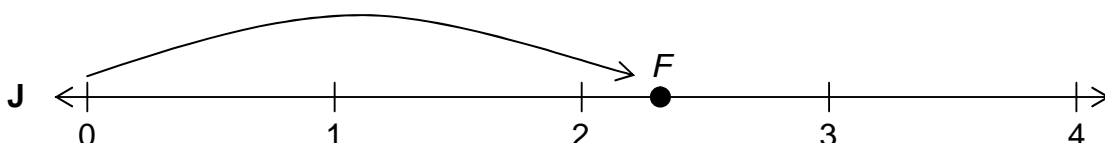
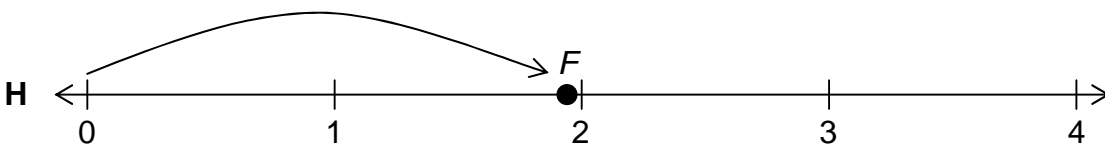
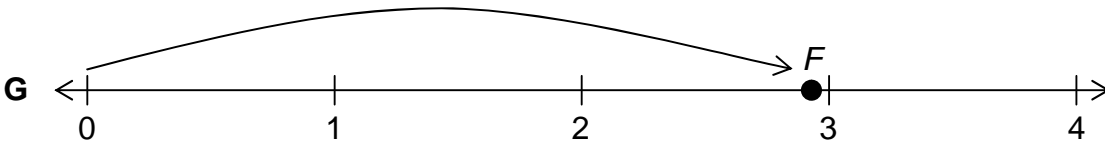
←	→	↶	↷	✖
1	2	3		
4	5	6		
7	8	9		
0	.	$\frac{\square}{\square}$		

4F

4 The table shows the lengths of the caterpillars that Claire keeps in a terrarium.

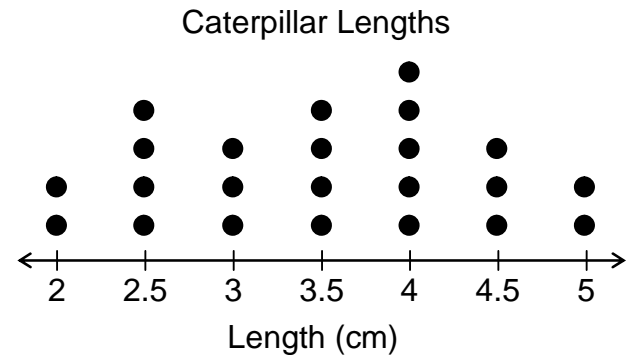
Length (cm)	Number of Caterpillars
2	
2.5	
3	
3.5	
4	
4.5	
5	

2 On which number line does point *F* best represent a distance of 1.95 units from zero?



3G

Claire made this dot plot to show the lengths of the caterpillars. The dot plot is incomplete.

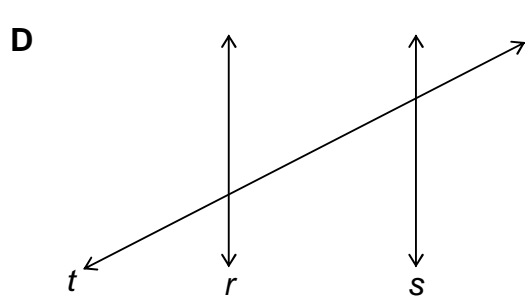
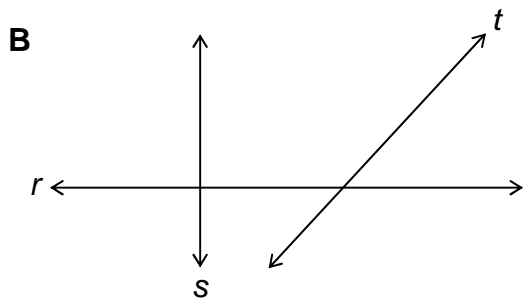
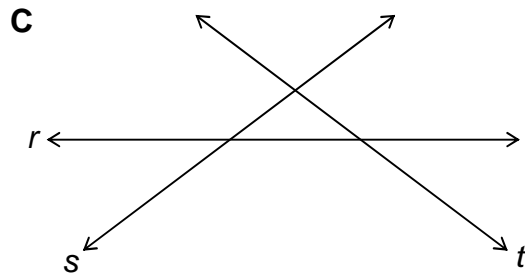
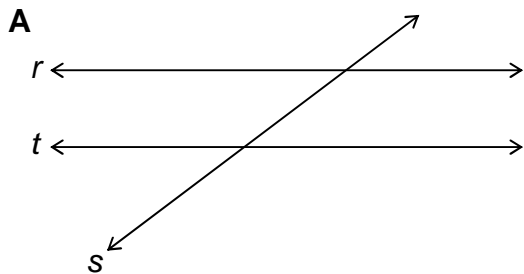


Which data are missing from the dot plot?

Select **TWO** correct answers.

- 3.5 5 2.5 4 4.5

1 In which drawing does line r appear to be parallel to line s ?



4 Armando sold ice cream treats at a festival. The cost of preparing the treats was \$17.57. The money he received from the sale of the treats was \$64.80. In dollars and cents, what was Armando's profit?

← → ↶ ↷ ✖

1	2	3
4	5	6
7	8	9
0	□ □	

5 Which figure CANNOT have perpendicular line segments?

- A** Rectangle **C** Right triangle
B Acute triangle **D** Square

2 Kiona's homework is $\frac{4}{6}$ complete.

Francisco's homework is $\frac{4}{8}$ complete

and Savannah's homework is $\frac{2}{3}$

complete. Which comparison is true?

F $\frac{4}{6} < \frac{4}{8}$

G $\frac{4}{8} > \frac{2}{3}$

H $\frac{4}{6} = \frac{2}{3}$

J $\frac{4}{6} > \frac{2}{3}$

3 The table shows the populations of 4 different cities in the United States.

City	Population
Mesa	528,159
Atlanta	512,550
Fresno	530,267
Sacramento	512,838

What is the order of the cities from least population to greatest population? *Move the correct answer to each box.*

Mesa

Atlanta

Fresno

Sacramento

Least → Greatest

3D

2C

1 The rectangular top of a microwave oven measures 14 by 25 inches. What is the area of the rectangular top in square inches?

- A 78 B 350 C 195 D 340

5D

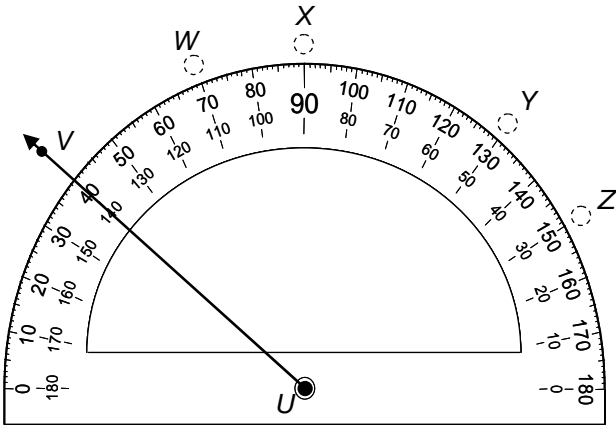
2 A rancher will receive a shipment of 85 sacks of cattle feed. He will need to protect the sacks in storage bins. He cannot put more than 6 sacks in a bin. How many bins does the rancher need to hold all of the sacks?

- F 15 H 12
G 13 J 17

4H

3 An angle with a measure of 50° can be created using the protractor. Ray UV is shown. Which point should be connected to point U to create a ray that completes the 50° angle?

Select **ONE** correct answer.

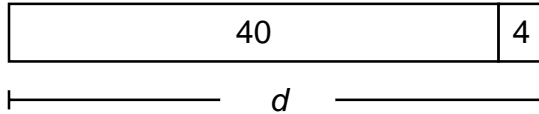


7C

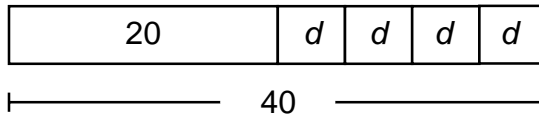
4 Ulric was given \$40. He saved half the money in his savings account. He will spend the rest of the money over the next 4 days. He will spend the same amount of money each day.

Which strip diagram shows a way to find d , the number of dollars Ulric will spend during each of the next 4 days?

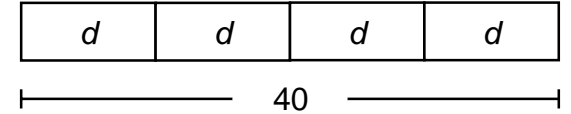
A



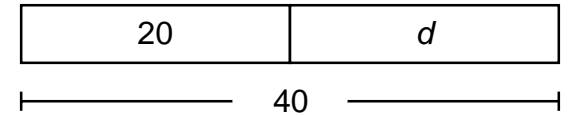
B



C



D



5A

5 A librarian estimates that the school library contains 44,000 books. Which statement about this number is true?

- F The value of the digit in the thousands place is $\frac{1}{10}$ the value of the digit in the ten thousands place.
G The value of the digit in the ten thousands place is $\frac{1}{100}$ the value of the digit in the thousands place.
H The value of the digit in the tens place is 10 times the value of the digit in the thousands place.
J The value of the digit in the thousands place is 10 times the value of the digit in the ten thousands place.

2A

6 Takeesha has completed $\frac{55}{100}$ of a puzzle. Which decimal is equivalent to this fraction?

- A 55.100 B 5.5 C 0.55 D 0.055

2G

1 The table shows the amounts that a gaming club paid for different expenses during four months.

Expense	Month 1	Month 2	Month 3	Month 4
Snacks and drinks	\$46.58	\$53.90	\$39.45	\$52.55
Gaming supplies	\$12.52	\$15.25	\$9.54	\$10.65
Facility rental	\$45.95	\$45.95	\$45.95	\$45.95
Guest speaker fee	\$125.00	\$150.00	\$0	\$115

Which expense was a fixed expense for the gaming club during the four months?

- A** Snacks and drinks **C** Facility rental
B Gaming supplies **D** Guest speaker fee

4 The population of the United States is 332,643,210. What is the value of the digit 6 in this number?

- A** 6,000 **C** 6,000,000
B 600,000 **D** 60,000

5 A rock quarry produces 100 tons of gravel each month. In 12 months, how many tons of gravel will the quarry produce?

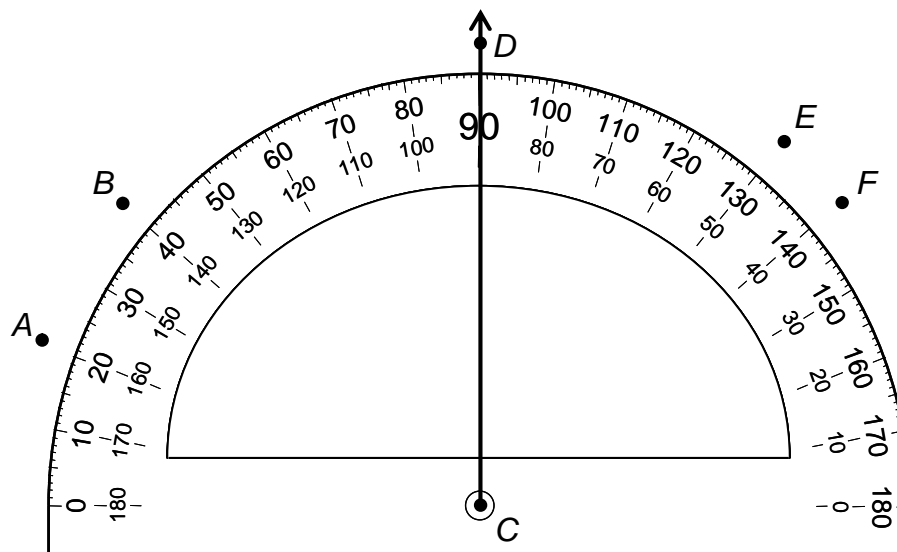
- F** 1,200 **H** 120
G 12,000 **J** 10,200

2 Cody ate $\frac{5}{8}$ of a sandwich. Liam ate less than $\frac{5}{8}$ of an identical sandwich. Which of these could be the amount of sandwich Liam ate?

Select **TWO** correct answers.


- $\frac{5}{6}$ sandwich
- $\frac{1}{3}$ sandwich
- $\frac{3}{4}$ sandwich
- $\frac{4}{5}$ sandwich
- $\frac{3}{6}$ sandwich

3 Ray CD has been drawn on the protractor shown here.



To construct an angle that has a measure of 40° , another ray can be drawn that starts at point C and passes through which point?

- F** Point A **G** Point B **H** Point E **J** Point F

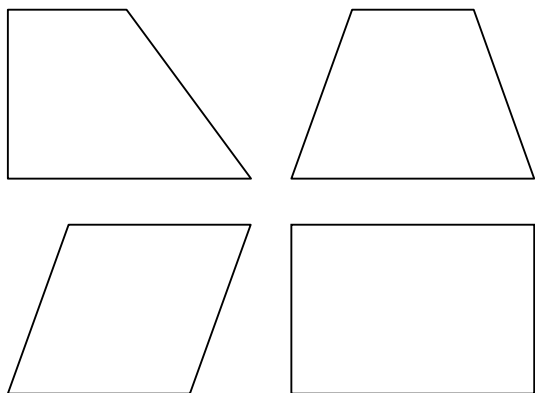
 **1** Which decimal values are equivalent to the given fractions?
Move the correct answer to each box.

0.12	1.02		
1.2	12.0	1.102	

$1\frac{2}{100} =$ $1\frac{2}{10} =$

2G

2 The polygons below belong in the same group.



Which statement best describes the polygons in this group?

- A** Each polygon has at least one right angle.
- B** Each polygon has at least one obtuse angle.
- C** Each polygon has at least one acute angle.
- D** Each polygon has at least one pair of parallel sides.

6D

3 Ms. Ramirez has \$2,435.25 in her savings account. If she withdraws \$150.70 from her account, how much money will be left?

- F** \$2,284.55 **H** \$2,294.50
G \$2,325.55 **J** \$2,585.95

4A

6 A red string is 1 foot 7 inches long. A black string is 1 foot 9 inches long. What is the combined length of the strings?

- F** 42 inches **H** 3 feet 4 inches
G 3 feet **J** 3 feet 6 inches

8C

4 Which measurement is likely closest to the weight of a basketball?

- A** 3 tons **B** 3 pounds **C** 3 ounces **D** 3 grams

8A



5 The list gives information about the favorite lunch of 30 students.

- ◆ 5 students chose salad.
- ◆ 2 times as many students chose pizza than salad.
- ◆ 2 fewer students chose sandwich than pizza.
- ◆ Half as many students chose stew than sandwich.
- ◆ The rest of the students chose pasta.

Use tally marks to create a frequency table that represents the number of students who chose each lunch.

Move the correct number of symbols to each box in the table. Each symbol may be used more than once.



Symbols

Favorite Lunch

Lunch	Number of Students
Salad	
Pizza	
Sandwich	
Stew	
Pasta	

9A

1 How is the number two and three hundredths written in expanded notation?

- A $(2 \times 100) + (3 \times 100)$
- B $(2 \times 1) + (3 \times 0.01)$
- C $(2 \times 0.1) + (3 \times 0.01)$
- D $(2 \times 1) + (3 \times 0.1)$

2B

2 Which expression has a quotient of about 9?

- F $46 \div 5$ H $12 \div 3$
- G $40 \div 6$ J $6 \div 3$

4G

3 Each of 12 watermelons was cut into 8 slices. The slices were placed onto 6 trays with the same number of slices on each tray. How many slices of watermelon were placed on each tray?

- A 26 slices
- B 12 slices
- C 14 slices
- D 16 slices

4H

4 A sign maker made two rectangular signs.

- ◆ The perimeter of the first sign was 24 feet.
- ◆ The area of the second sign was 24 feet.

Which measurements could be the dimensions of each rectangular sign?

Move the correct answer to each box. Each answer may be used more than once. Not all answers will be used.

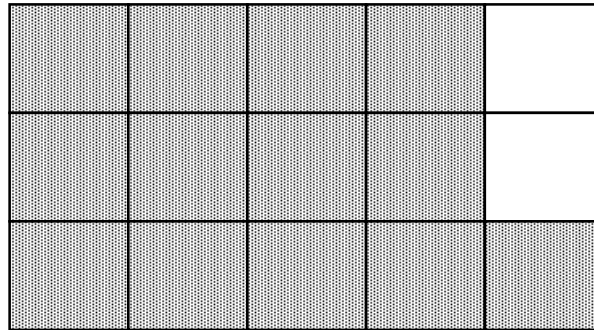
Length: 12 feet Width: 2 feet	Length: 12 feet Width: 12 feet	Length: 14 feet Width: 10 feet	Length: 6 feet Width: 6 feet
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First sign:

Second sign:

5D

5 The shaded parts of the model represent the combined fraction of a wall Andrew and Maxim painted. Andrew painted $\frac{6}{15}$ of the wall.



What fraction of the wall did Maxim paint?

- F $\frac{7}{15}$ G $\frac{9}{15}$ H $\frac{2}{15}$ J $\frac{5}{15}$

3E

6 Which triangle appears to be a right triangle?

<p>A</p>	<p>C</p>
<p>B</p>	<p>D</p>

6C