

# Mathematics Chart

<b>LENGTH</b>	
<b>Metric</b>	<b>Customary</b>
1 kilometer = 1000 meters	1 mile = 1760 yards
1 meter = 100 centimeters	1 mile = 5280 feet
1 centimeter = 10 millimeters	1 yard = 3 feet
	1 foot = 12 inches

<b>CAPACITY AND VOLUME</b>	
<b>Metric</b>	<b>Customary</b>
1 liter = 1000 milliliters	1 gallon = 4 quarts
	1 gallon = 128 ounces
	1 quart = 2 pints
	1 pint = 2 cups
	1 cup = 8 ounces

<b>MASS AND WEIGHT</b>	
<b>Metric</b>	<b>Customary</b>
1 kilogram = 1000 grams	1 ton = 2000 pounds
1 gram = 1000 milligrams	1 pound = 16 ounces

<b>TIME</b>
1 year = 365 days
1 year = 12 months
1 year = 52 weeks
1 week = 7 days
1 day = 24 hours
1 hour = 60 minutes
1 minute = 60 seconds

Metric and customary rulers can be found on the separate Mathematics Chart.

Continued on the next page

**Mathematics Chart**

<b>Perimeter</b>	square	$P = 4s$
	rectangle	$P = 2l + 2w$ or $P = 2(l + w)$
<b>Area</b>	square	$A = s^2$
	rectangle	$A = lw$ or $A = bh$
	triangle	$A = \frac{1}{2}bh$ or $A = \frac{bh}{2}$

**DIRECTIONS**

Read each question. Then fill in the correct answer on your answer document. If the correct answer is not here, mark the letter for "Not here."

**SAMPLE A**

Which digit is in the thousands place in the number 4,861,392?

- A 6
- B 4
- C 1

**SAMPLE B**

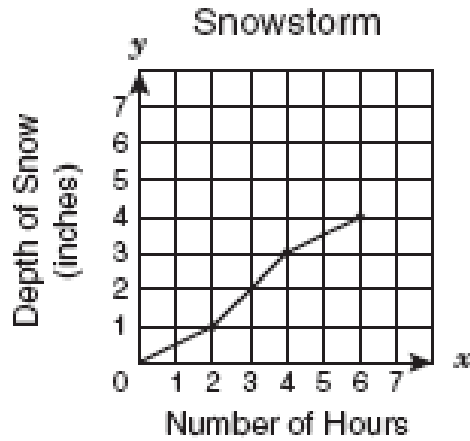
Joey has 8 books. Roberto has twice as many books as Joey has. How many books does Roberto have?

- F 2
- G 16
- H 20



1. The graph below shows the **depth** of snow in Mountain View during a snowstorm.

**Depth:** how deep something is.



Which table matches the details in the graph?

**A** **Snowstorm**

Number of Hours	Depth of Snow (inches)
2	1
4	2
6	4

**B** **Snowstorm**

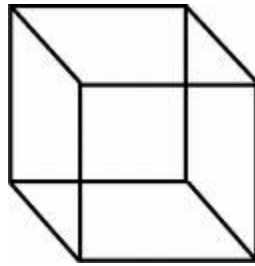
Number of Hours	Depth of Snow (inches)
2	2
4	3
6	4

**C** **Snowstorm**

Number of Hours	Depth of Snow (inches)
2	1
4	3
6	4



2. Which statement about a cube is true?



**Vertices:** corners

**Faces:** flat sides

**Edges:** where the sides of the faces meet

- F** It has exactly 4 vertices
  - G** It has exactly 8 edges
  - H** It has exactly 6 faces
- 

3. Mr. Vale buys about 14.7 gallons of gas for his car every week. About how many gallons of gas does he buy in 4 weeks?

- A** 15 gallons
- B** 60 gallons
- C** 105 gallons



4. Charlene decided to find the temperature outside. She tested the theory below. She counted 162 cricket chirps in one minute.

To find the temperature,

- first count the number of chirps a cricket makes during a 1-minute period.
- Subtract 50 from that number
- and divide the difference by 4.
- Then add 50 to that number.

This should give you the temperature outside in degrees Fahrenheit.

Based on the information in the box, what should the outside temperature be in degrees Fahrenheit?

**F** 93°F

**G** 78°F

**H** 33°F



5. Lisa's birthday falls on a date in April that is a **prime number**. Which could be the date of his birthday?

**Prime number:** a number that can only be divided by itself and the number 1.

- A April 29
- B April 15
- C April 9



6. The table below shows the number of bills of each value that Debbie had in her wallet.

<b>Bills in Eunice's Wallet</b>	
<b>Value of Bill</b>	<b>Number of Bills</b>
\$1	7
\$5	4
\$10	2
\$20	1

In all, what fraction of the number of bills in Debbie's wallet were \$5 or \$20 bills?

**F**      $\frac{11}{14}$

**G**      $\frac{3}{28}$

**H**      $\frac{5}{14}$



7. Ben's family is going to see a movie. Admission is \$3 for children and \$5 for adults.

Based on this information, which statement is true?

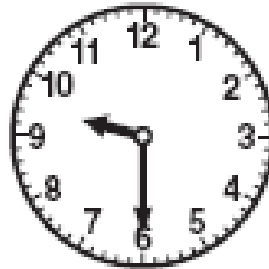
- A The admission is the same for 3 children as for 3 adults
- B The admission is the same for 5 children as for 3 adults
- C The admission is the same for 2 children as for 5 adults



8. A chili cook-off started at 9:30<sub>A.M.</sub>. All the chili had finished cooking 3 hours 40 minutes later.

Which clock shows the time at which all the chili finished cooking?

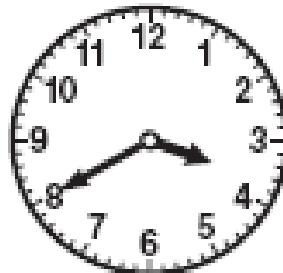
F



G

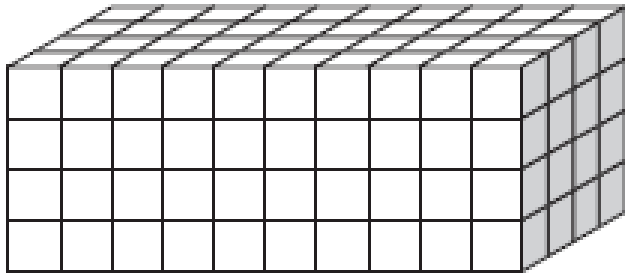


H



**GO ON** 

9. Look at the figure below made up of 1-unit cubes.



**Volume =**

*Length x width x height*

What is the **volume** of the figure?

- A** 16 cubic units
- B** 80 cubic units
- C** 160 cubic units



10. This year the state of Washington produced between 5,700,000,000 and 5,800,000,000 pounds of apples.

Which could be the number of pounds of apples the state produced during this year?

- F 5,897,043 lb
- G 5,919,042,046 lb
- H 5,729,000,123 lb

- 
11. What is the **prime factorization** of 100?

**Prime factorization:** list of prime numbers that, when multiplied together, equal the number being factored.

- A  $2 \times 2 \times 5 \times 5$
- B  $2 \times 2 \times 25$
- C  $4 \times 5 \times 5$



12. Henry made a long-distance phone call that lasted 12 minutes. The call cost \$0.35 for each minute. If there was an extra charge of \$1.50, which number sentence shows how much Henry's phone call cost?

**F**  $(\$0.35 \times 12) + \$1.50 = \square$

**G**  $(\$0.35 + 12) + \$1.50 = \square$

**H**  $(\$0.35 + 12) \times \$1.50 = \square$



**13.** Look at the pattern of numbers below:

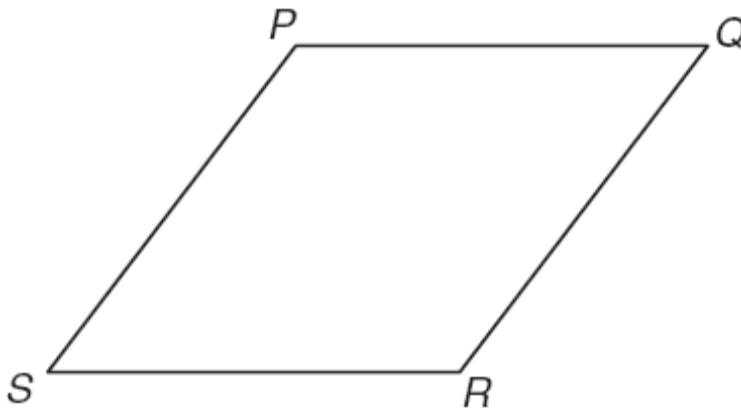
28, 84, 252, 756

Which describes the rule for determining the last 3 numbers shown in this pattern?

- A** Each number is 64 more than the previous number.
- B** Each number is 4 times the previous number.
- C** Each number is 3 times the previous number.



14. All the sides of parallelogram PQRS are congruent.



**congruent:** exactly the same in size, angle, etc.

**parallel:** lines that are the same distance from one another at every point; never intersecting.

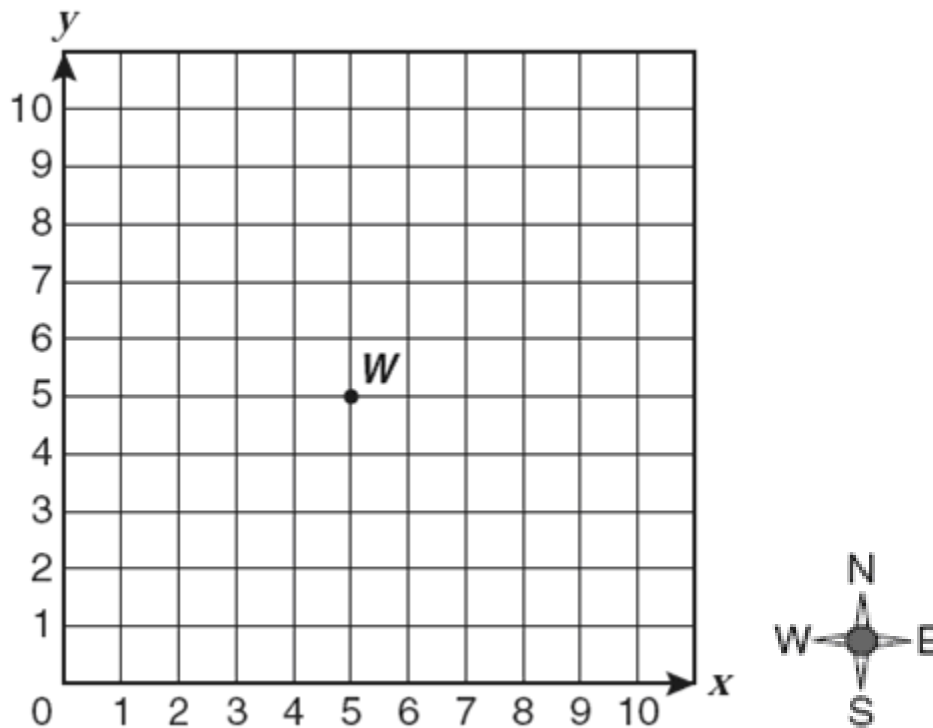
**perpendicular:** lines at a right angle ( $90^\circ$ ) from each other

Which of the following statements about parallelogram PQRS appears to be true?

- F  $\overline{PQ}$  is parallel to  $\overline{SR}$ .
- G  $\overline{PQ}$  is parallel to  $\overline{QR}$ .
- H  $\overline{SR}$  is perpendicular to  $\overline{QR}$ .



15. Look at the coordinate grid below.



Look at point **W** on the grid.

Find the following point. Go 4 units east and 2 units south.

What are the coordinates?

- A (5,5)
- B (9,3)
- C (1,7)

**GO ON** 

- 16.** Ken ran a 1-kilometer race. When he was halfway to the finish line, how many meters did he have left to run?

**1 kilometer = 1000 meters**

- F** 50m
- G** 100m
- H** 500m



17. The fifth grade is holding an election for a student council representative. Only 30 students have voted so far. The results are shown in the table below.

<b>Student Council Election</b>	
<b>Nominated Student</b>	<b>Number of Votes</b>
Mike	13
Amy	8
Joyce	6
Brandon	3

Based on these results, how many votes would Amy probably have when 60 students have voted?

- A 8
- B 24
- C 16



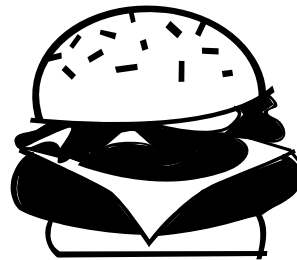
18. How many ounces does a  $\frac{1}{4}$  pound hamburger patty weigh?

1 pound = 16 ounces

F 4 oz

G 12 oz

H 16 oz



GO ON 

19. How many different combinations of 1 type of salad and 1 type of dressing can a customer choose?

Salad Menu	
Type of Salad	Type of Dressing
Garden	Ranch
Chef	Thousand Island
Chicken	Italian

- A 9
- B 5
- C 11



20. Look at the table below.

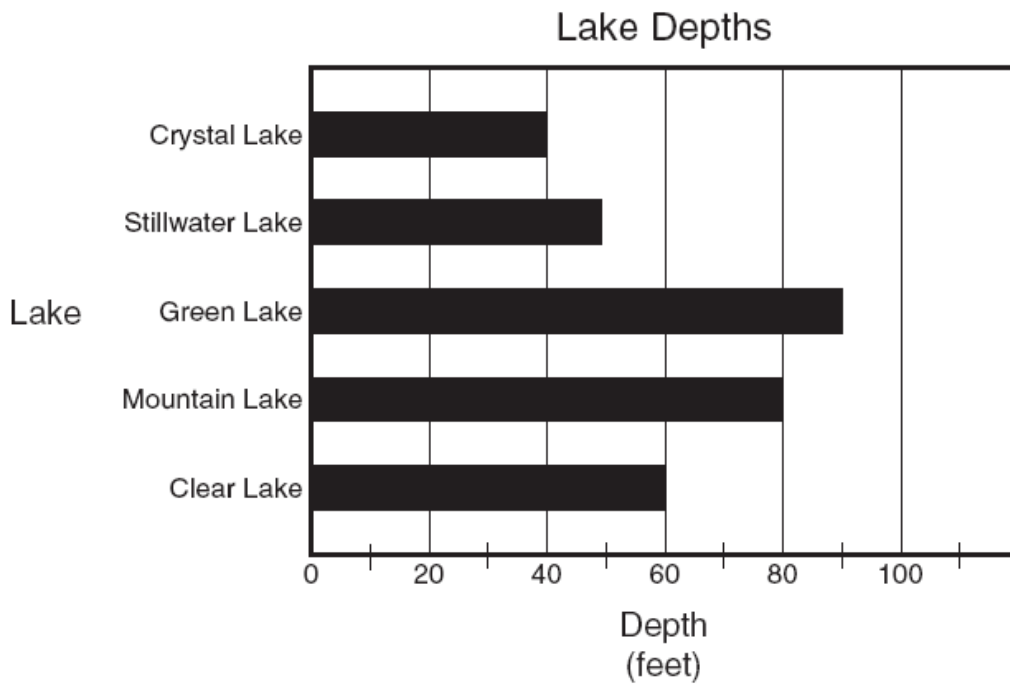
<b>Vickie Walking to School</b>				
	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>
Time she left home	6:52AM	7:03AM	6:43AM	6:58AM
Time she arrived at school	7:16 AM	7:27 AM	7:07 AM	7:22AM

What is the difference between the time Vikki left home and the time she arrived at school each day?

- F** She arrived at school 11 minutes after she left home.
- G** She arrived at school 24 minutes after she left home.
- H** She arrived at school 36 minutes after she left home.



21. The graph shows the depth of 5 lakes.



What is the **median** depth of these 5 lakes?

- A 80 ft
- B 60 ft
- C 90 ft

**median:** the middle number in a list of numbers arranged by their value



22. Look at the pattern of numbers below.

6, \_\_, 20, 27, 34

Which expression could be used to find the missing number in the pattern?

**F**  $(6 + 34) \div 2$

**G**  $(27 - 20) + 6$

**H**  $(6 \times 20) \div 2$



23. The students voted for their favorite brand of toothpaste.

- Brand Z received twice as many votes as Brand X
- Brand Y received 3 times as many votes as Brand X

Which of the following tables correctly represents the results of the survey?

**A** Favorite Toothpaste

Brand of Toothpaste	Number of Votes
X	60
Y	90
Z	30

**B** Favorite Toothpaste

Brand of Toothpaste	Number of Votes
X	30
Y	90
Z	60

**C** Favorite Toothpaste

Brand of Toothpaste	Number of Votes
X	90
Y	30
Z	60



**24.** Sherry bought as many pieces of candy as possible with \$4.20.

Candies cost 10 cents each or \$1.00 for a **dozen**.

How many candies did Sherry buy?

**F** 50 candies

**G** 62 candies

**H** 49 candies

<b>Dozen = 12</b>
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25. Look at the table below.

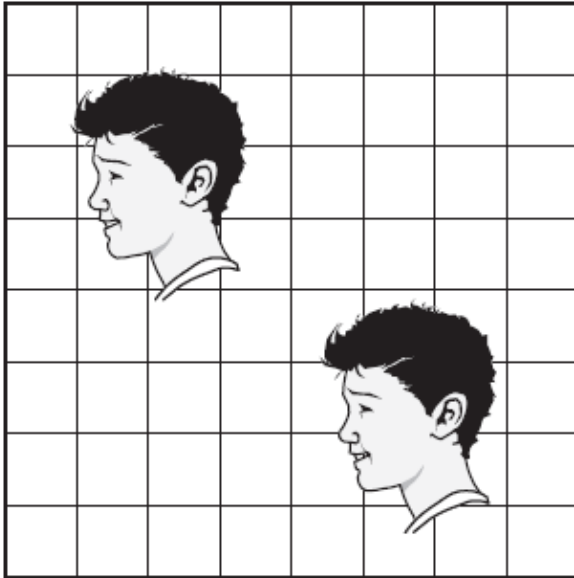
Houses on John's Street	
Color Painted	Fraction Painted That Color
White	$\frac{1}{3}$
Tan	$\frac{1}{6}$
Gray	$\frac{1}{18}$

Which color was used for the smallest fraction of the houses on John's street?

- A White
- B Tan
- C Gray



26. Which single transformation is shown below?



**Translation:** moving a graph a distance by adding the same number to both the x and y value.

**Reflection:** the placement of one graph or image directly opposite another image as though reflected in a mirror.

**Rotation:** a copy of a graph in a placed as though turned around a single point from the location of an identical graph.

- F Translation
- G Reflection
- H Rotation



27. Dawn is choosing ice cream. Her choices are shown in the table below.

If Dawn chooses a flavor, a candy, and nuts, what is the total number of combinations she can make?

Ice Cream		
Flavors	Candies	Nuts
Vanilla	Sprinkles	Walnuts
Chocolate	M&Ms	Pecans
Strawberry		

- A 3
- B 12
- C 18



**28.** Which of the following is equal to  $2 \frac{1}{2}$  gallons?

1 gallon = 4 quarts

- F** 6 quarts
- G** 10 quarts
- H** 40 quarts



**29.** Lori won 384 tennis matches during 8 years. She won the same number of matches each year.

How many matches did Lori win each year?

**A** 23

**B** 48

**C** 33



**30.** Erin weighed 6 pounds 5 ounces when she was born.  
How many ounces did she weigh?

1 pound = 16 ounces
---------------------

- F** 32 ounces
- G** 75 ounces
- H** 101 ounces



31. Jan has 4 different types of ribbon. The color and **width** can be found in the table below.

**Width:** how wide the ribbon is

Ribbon	
Color	Width
Red	$\frac{4}{5}$ inch
Green	$\frac{1}{2}$ inch
Yellow	$\frac{3}{4}$ inch

Jan needs ribbon that is  $\frac{12}{16}$  inch wide.

Which color of ribbon has an equivalent width?

- A Red
- B Green
- C Yellow



32. Kathy planted flowers in her yard. The table below shows the height of 1 flower.

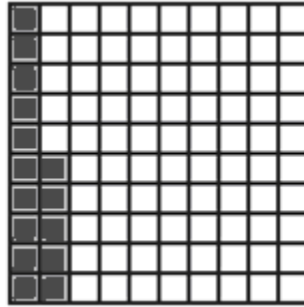
Flower Heights	
Date	Height
April 15	58.8

Which of the following shows the height of the flower written out in words?

- F Five hundred and eight tenths
- G Five hundred and eighty-eight
- H Fifty eight and eight tenths



33. The model below shows  $\frac{15}{100}$  boxes shaded.

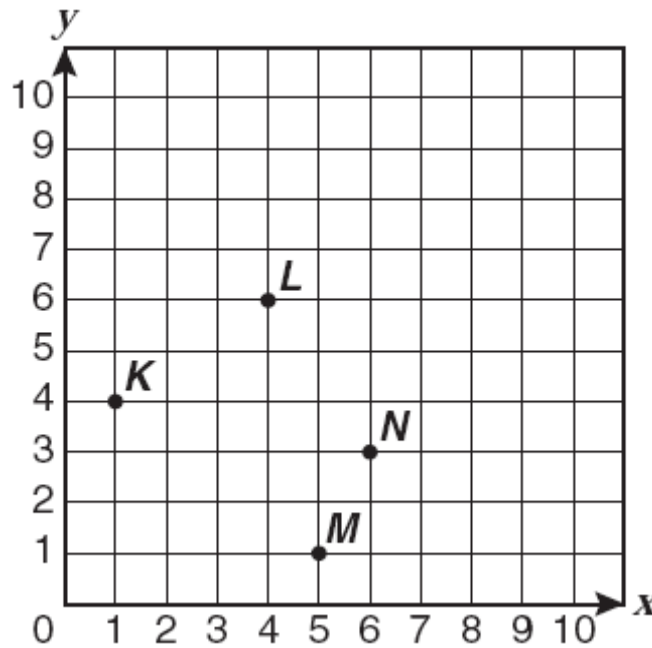


Which decimal is the same as  $\frac{15}{100}$ ?

- A 1.15
- B 1.5
- C 0.15



34. Look at the points on the grid below.

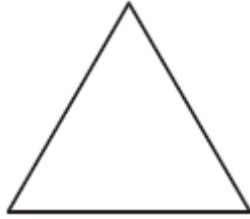


Which of the following points is closest to  $(1,6)$ ?

- F** Point *K*
- G** Point *M*
- H** Point *N*



35. An **equilateral triangle** is shown below.



**Equilateral triangle:** a triangle with sides that all match each other exactly and angles that all match each other exactly.

Which statement about the triangle is true?

- A The triangle has 2 sides that form a right angle.
- B All the triangle's sides are the same length.
- C None of the triangle's sides are the same length.

