
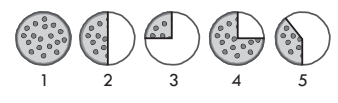


### below 161

**Number Sense**  
Students understand and apply concepts of numbers including representing, identifying, counting, comparing, ordering, equivalence, and number theory.

How many?  
  
 A. 8  
 B. 5  
 C. 6  
 D. 4  
 E. 7

### 161-170

Which shows  $\frac{1}{2}$  of a pizza?  
  
 A. 1  
 B. 2  
 C. 3  
 D. 4  
 E. 5

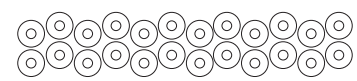
### 171-180

68 equals  
 A. 60 + 8  
 B. 60 + 80  
 C. 6 + 8  
 D. 600 + 8  
 E. 6 + 80

### 181-190

Round 68 to the nearest tens place.  
 A. 78  
 B. 70  
 C. 60  
 D. 80  
 E. 100

### 191-200

How many dozen doughnuts?  
  
 A. 3  
 B. 24  
 C. 2  $\frac{1}{2}$   
 D. 2  
 E. 4

### 201-210

What is  $\frac{6}{12}$  in simplest form?  
 A.  $\frac{1}{2}$   
 B.  $\frac{12}{24}$   
 C.  $\frac{2}{4}$   
 D.  $\frac{1}{6}$   
 E.  $\frac{1}{12}$

### 211-220

-18  $\square$  -6  
 Which is the correct symbol for the box?  
 A. <  
 B. >  
 C. =  
 D. 3  
 E. £

### 221-230

What is the Greatest Common Factor of 54 and 72?  
 A. 9  
 B. 18  
 C. 1  
 D. 2  
 E. 6

### 231-240

What is 2  $\frac{1}{8}$  written as a decimal?  
 A. 2.25  
 B. 2.1  
 C. 2.125  
 D. 2.13  
 E. 2.5

### 241-250

43,000 equals:  
 A. 4.3 x 10<sup>3</sup>  
 B. 4.3 x 10<sup>4</sup>  
 C. 4.3 x 10<sup>5</sup>  
 D. 43 x 10<sup>4</sup>  
 E. 43 x 10<sup>5</sup>

### above 250

What is 162% written as a fraction?  
 A.  $\frac{162}{10}$   
 B.  $\frac{162}{1000}$   
 C.  $1 \frac{31}{50}$   
 D.  $1 \frac{62}{1000}$   
 E. 162

### Estimation and Computation

Students understand the processes for computation and can accurately compute and solve problems using whole numbers, fractions, decimals, integers, rational, and real numbers.

6 + 2 =  $\square$   
 A. 4  
 B. 26  
 C. 9  
 D. 8  
 E. 62

$\begin{array}{r} 63 \\ + 34 \\ \hline \end{array}$   
 A. 37  
 B. 97  
 C. 71  
 D. 98  
 E. 31

$\begin{array}{r} 99 \\ - 56 \\ \hline \end{array}$   
 A. 34  
 B. 155  
 C. 53  
 D. 43  
 E. 42

$\begin{array}{r} 23 \\ \times 3 \\ \hline \end{array}$   
 A. 56  
 B. 66  
 C. 69  
 D. 59  
 E. 68

$\frac{5}{7} - \frac{3}{7} =$   
 A.  $\frac{8}{7}$   
 B. 2  
 C.  $\frac{2}{7}$   
 D. 0  
 E. 7

0.32  $\div$  8 =  
 A. 4.3  
 B. 0.15  
 C. 0.04  
 D. 280  
 E. 43.75

Which is the most appropriate estimation for 7298  $\times$  632?  
 A. 7298  $\times$  632  
 B. 7000  $\times$  600  
 C. 7298.4  $\times$  632.9  
 D. 7290  $\times$  600  
 E. 8000  $\times$  600

-6 + (-7) =  
 A. +13  
 B. -1  
 C. 42  
 D. 1  
 E. -13

8 is what % of 32?  
 A.  $\frac{1}{4}$   
 B. 4%  
 C. 20%  
 D. 25%  
 E. 2.56%

$\frac{31}{6} - (-3 \frac{3}{8}) =$   
 A.  $8 \frac{13}{24}$   
 B. 4  $\frac{1}{7}$   
 C.  $1 \frac{19}{24}$   
 D.  $17 \frac{7}{16}$   
 E.  $-17 \frac{7}{16}$

Simplify 5<sup>-4</sup>  
 A. 625  
 B.  $\frac{1}{20}$   
 C.  $\frac{1}{625}$   
 D. -20  
 E. -625

### Algebra

Students understand and apply algebraic concepts including extending patterns, simplifying expressions, solving equations and inequalities, using coordinate graphing, and solving functions and matrices.

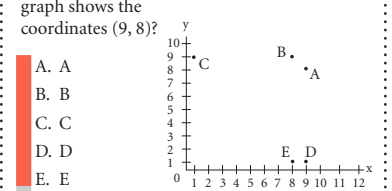
Which number does not fit?  
 2, 4, 5, 6, 8, 10  
 A. 10  
 B. 6  
 C. 4  
 D. 5  
 E. 8

$\square + 7 = 13$   
 $\square$  equals?  
 A. 11  
 B. 18  
 C. 9  
 D. 10  
 E. 6

14  $\square$  6 = 8  
 $\square =$   
 A. +  
 B. -  
 C.  $\times$   
 D. <  
 E. >

52 -  $\square = 12$   
 $\square =$   
 A. 30  
 B. 32  
 C. 40  
 D. 42  
 E. 64

21 + 6 +  $\square = 30$   
 $\square =$ ?  
 A. 3  
 B. 9  
 C. 24  
 D. 27  
 E. 57

Which point of the graph shows the coordinates (9, 8)?  


If 6n = 102, n equals  
 A. 12  
 B. 17  
 C. 108  
 D. 196  
 E. 612

Evaluate gh - b if  
 g = 4, h = 9, b = 12  
 A. 48  
 B. 37  
 C. 25  
 D. 24  
 E. 1

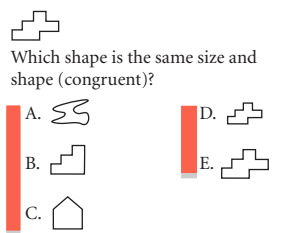
What is the missing value of y?  
 A. 4  
 B. 3  
 C. 1  
 D. 0  
 E. -1  
 y = -2x + 5






Factor x<sup>2</sup> - 5x - 36  
 A. (x - 6)(x - 6)  
 B. (x + 9)(x - 4)  
 C. (x - 36)(x + 1)  
 D. (x - 9)(x + 4)  
 E. (x + 6)(x + 6)

What is the x intercept of 4x + 2y = 8?  
 A. 8  
 B. 2  
 C. 4  
 D.  $\frac{1}{2}$   
 E. -4

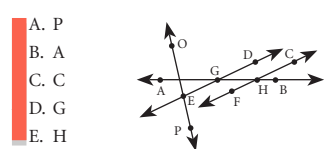
### Geometry

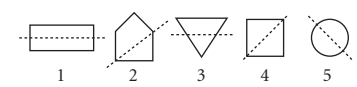
Students understand and apply geometric concepts including identification and classification of 2- and 3-D objects, symmetry and transformations, similar and congruent figures, Pythagorean Theorem, and scale.

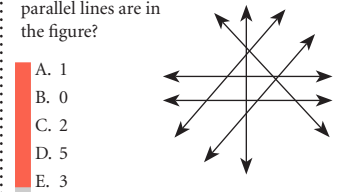
Which shape is the same size and shape (congruent)?  


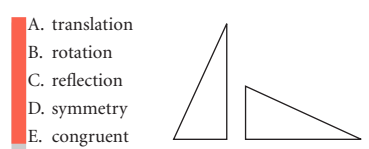
Which of these is a triangle?  
 A.   
 B.   
 C.   
 D.   
 E. 

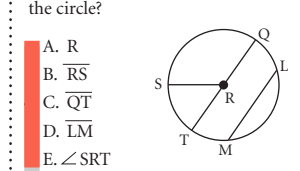
Which makes us think of a circle?  
 A. block  
 B. pen  
 C. door  
 D. a football field  
 E. bicycle wheel

Which point is on line DE?  


Which figures show a line of symmetry?  


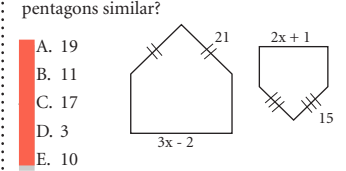
How many sets of parallel lines are in the figure?  


What type of transformation is shown?  


Which of these is a diameter of the circle?  



Which of these has a rectangular base and four triangular faces?  
 A. cube  
 B. rectangular prism  
 C. triangular prism  
 D. rectangular pyramid  
 E. triangular pyramid

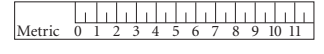
Using the Pythagorean Theorem, a<sup>2</sup> + b<sup>2</sup> = c<sup>2</sup>, when a = 9 and b = 12, then c = ?  
 A. 8  
 B. 21  
 C. 15  
 D.  $\sqrt{21}$   
 E. 225

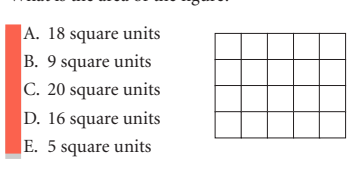
What value of x would make these pentagons similar?  


### Measurement

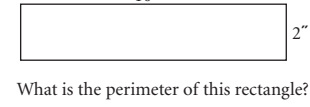
Students understand and apply concepts of measurement including measuring, conversion, using appropriate units, and calculating perimeter and circumference, area, surface area, volume, and rate.

Who is the shortest?  


The pencil is about how many centimeters long?  


What is the area of the figure?  


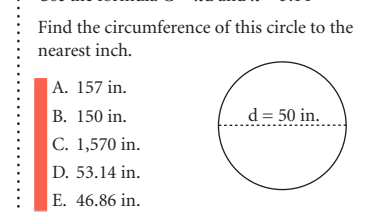
Dante has 3 dimes, 2 nickels, and 4 pennies.  
 How much money does Dante have?  
 A. 21 ¢  
 B. 29 ¢  
 C. 36 ¢  
 D. 39 ¢  
 E. 44 ¢

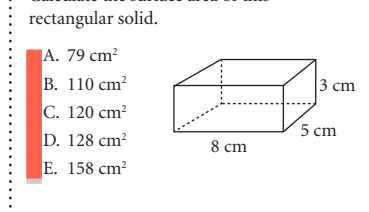
10"  
  
 What is the perimeter of this rectangle?  
 A. 12"  
 B. 24"  
 C. 8"  
 D. 16"  
 E. 20"

Select the best estimate for the length of a new pencil.  
 A. 8 cm  
 B. 18 m  
 C. 18 cm  
 D. 18 mm  
 E. 8 m

4 yards =  $\square$   
 A. 16 feet  
 B. 20 feet  
 C. 144 inches  
 D. 80 inches  
 E. 36 inches

Sara and Miguel need to travel 185  $\frac{1}{2}$  miles. They would like to arrive in 3  $\frac{1}{2}$  hours.  
 What must be their average speed, in mph?  
 A. 24 mph  
 B. 35 mph  
 C. 53 mph  
 D. 57.9 mph  
 E. 60 mph

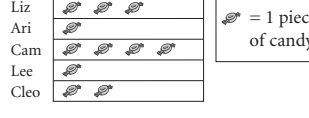
Use the formula C =  $\pi$ d and  $\pi = 3.14$   
 Find the circumference of this circle to the nearest inch.  


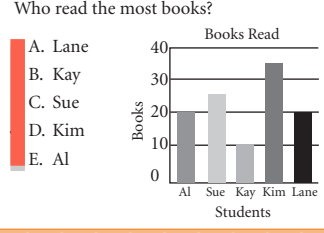
Calculate the surface area of this rectangular solid.  


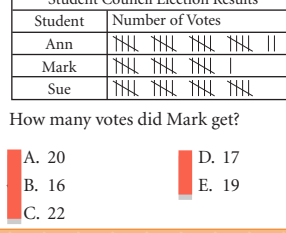
The diameter of sphere A is twice the size of sphere B. What is the ratio of the volume of sphere A to that of sphere B?  
 A. 8 : 1  
 B. 1 : 8  
 C. 2 : 1  
 D. 1 : 2  
 E. 1 : 1

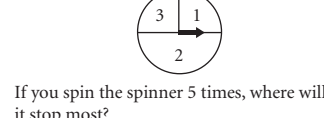
### Statistics and Probability

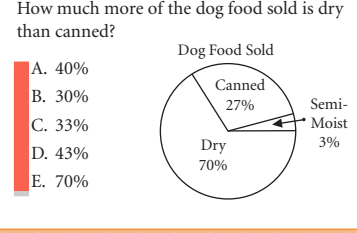
Students understand and apply concepts of organizing, reading, and interpreting graphs, collecting and analyzing data, and interpreting and predicting using probability and combinations.

Who has the most candy?  


Who read the most books?  


Student Council Election Results  


If you spin the spinner 5 times, where will it stop most?  


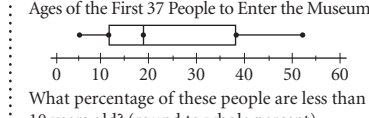
How much more of the dog food sold is dry than canned?  


A box contains 13 balls. 3 balls are red, 5 are blue, 4 are orange, and 1 is yellow.  
 What is the probability of picking a red ball?  
 A.  $\frac{3}{5}$   
 B.  $\frac{3}{10}$   
 C.  $\frac{1}{13}$   
 D.  $\frac{3}{13}$   
 E.  $\frac{5}{13}$

Diana received scores of 100, 63, 80, 85 and 92 on her math tests. What is her mean (average) score?  
 A. 83  
 B. 84  
 C. 85  
 D. 86  
 E. 87

If the average of five numbers is 50 and four of the numbers are 25, 75, 30, and 70, what is the fifth number?  
 A. 75  
 B. 50  
 C. 30  
 D. 20  
 E. 10

What is the probability of getting 1 red pen from a case containing 3 blue pens, 4 black pens, 2 purple pens, and 5 red pens?  
 A.  $\frac{1}{5}$   
 B.  $\frac{1}{9}$   
 C.  $\frac{5}{9}$   
 D.  $\frac{1}{14}$   
 E.  $\frac{5}{14}$

Ages of the First 37 People to Enter the Museum  
  
 What percentage of these people are less than 10 years old? (round to whole percent)  
 A. 12%  
 B. 33%  
 C. 23%  
 D. 40%  
 E. 19%

The teacher told the class the "average" score on the test was 80%. Which of these selections represents a central tendency of 80%?  
 A. mean and median only  
 B. mean only  
 C. mean, median, and mode  
 D. mean and mode only  
 E. mode and median only

Test Grades:  
 86, 78, 82, 70,  
 90, 76, 94, 84,  
 70, 80, 80, 70

### Problem Solving, Reasoning, and Proofs

Students understand and apply the processes of problem solving including understanding and representing problems, developing solution strategies, verifying results, and explaining reasoning strategies and proofs.

$\star\star\star\star + \star\star\star\star = ?$   
 A. 5  
 B. 3  
 C. 7  
 D. 4  
 E. 6

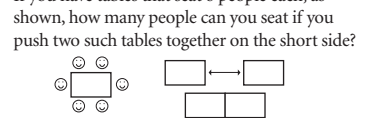
Alonso has 8 pieces of gum. Gloria gives him 3 more pieces. How many pieces of gum does Alonso have now?  
 A. 12  
 B. 5  
 C. 24  
 D. 10  
 E. 11

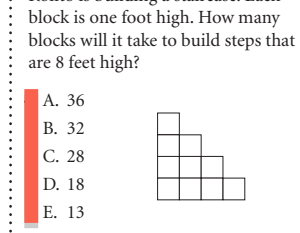
10 students will play basketball after school. They ask 5 more students to play with them. If you want to find out how many students will play in all, what method should you use?  
 A. simplify  
 B. subtract  
 C. add  
 D. multiply  
 E. divide

The children ate 8 slices of pizza. The pizza was cut into 12 pieces.  
 Which number sentence correctly tells you how many slices were left?  
 A. 12 - 8 = 4  
 B. 8 + 12 = 20  
 C. 8 + 4 = 12  
 D. 20 - 8 = 12  
 E. 20 - 4 = 16

Suzana is making a fruit salad. She buys 2 bananas, 3 apples, 1 pear, and 25 grapes. She paid \$3.82 for the fruit. How many pieces of fruit did she buy?  
 What information do you not need to know to solve this problem?  
 A. 2 bananas  
 B. 3 apples  
 C. 1 pear  
 D. 25 grapes  
 E. \$3.82

Maria is 5 years older than her brother José. Next year she will be 14 years old. How old is José now?  
 A. 8  
 B. 9  
 C. 10  
 D. 18  
 E. 19

If you have tables that seat 6 people each, as shown, how many people can you seat if you push two such tables together on the short side?  


Rolito is building a staircase. Each block is one foot high. How many blocks will it take to build steps that are 8 feet high?  


Slugger Joe hit 32 home runs the first season. He hit 39 home runs the second season. This season he hit 1.5 times as many home runs as he hit in his first season. How many home runs did he hit this season?  
 Which of these shows a way to solve this problem?  
 A. 32 + 39  
 B. 32  $\times$  1.5  
 C. 32 + 1.5  
 D. 39  $\times$  1.5  
 E. (32  $\times$  1.5) + 39

A \$30.00 pair of jeans is discounted 20%. If sales tax is 5%, what will be the final price for the jeans?  
 A. \$22.80  
 B. \$24.00  
 C. \$24.20  
 D. \$25.20  
 E. \$28.35

At the beginning of a trip you had a number of quarters. On your first stop, you spent half of them. On your second stop, you spent one third of the remaining quarters. On your third stop, you spent 4 and on your last stop, you spent half of the remaining quarters and then lost 2 more. You have 3 quarters left. How many quarters did you start with?  
 A. 42  
 B. 60  
 C. 40  
 D. 48  
 E. 54