

Practice: Problem Solving

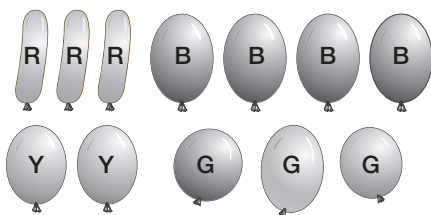
Solve.

- 1 **FRUIT** Leon brought a bag of fruit to his after-school meeting. There were 4 apples, 3 bananas, and 6 pears in the bag. What fraction of the fruit was bananas?

- 2 **SHIRTS** Carla bought 5 new sweatshirts. Three sweatshirts were red, 1 sweatshirt was blue, and 1 sweatshirt was green. What fraction of the sweatshirts was blue?

What fraction of the sweatshirts was red?

- 3 **BALLOONS** Angie bought the following balloons for the party:



What fraction of the balloons is blue?

What fraction of the balloons is red?

What fraction of the balloons is not green?

- 4 **SCHOOL** Savannah brought in 20 cupcakes to share at snack time. She gave 12 cupcakes to the students and 3 cupcakes to the teachers. What fraction of the cupcakes did Savannah give out?

- 5 **PUZZLES** I am a fraction that has a denominator of 7 and a numerator of 3. What fraction am I?

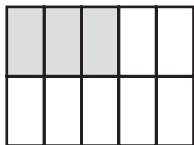
Practice: Problem Solving

Solve. Use fraction tiles or fraction circles.

- 1 **COOKING** Miriam baked cookies to share with Tom. Tom ate $\frac{3}{7}$ of the cookies. How many cookies are left for Miriam? _____

- 2 **SCHOOL** Cory wrote $\frac{3}{13}$ of his book report over the weekend. How many pages will Cory's completed book report be? _____

- 3 **GARDENING** The picture is a diagram of Luis's garden. He planted flowers in the shaded part of the garden.

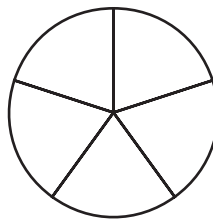


In what fraction of the garden are flowers planted? _____

How is this fraction written as a decimal? _____

- 4 **BASKETBALL** There are 12 students on the basketball team. Only 5 students are allowed on the court at a time. What fraction of the students is not on the court at any given time? _____

- 5 **FOOD** Ms. Kim cut a pizza into 5 slices. Hannah ate $\frac{1}{5}$ of the pizza. Shade the picture of the pizza to show how many pieces Hannah ate? _____



- 6 **CALENDAR** Roxanna does yard work on Tuesday, Thursday, and Saturday. What fraction of the days of the week does Roxanna do yard work? _____

- 7 **HOBBIES** Margarite is doing a puzzle. She placed $\frac{3}{20}$ of the pieces together so far. How many pieces are in the whole puzzle? _____

Practice: Problem Solving

Solve.

- 1 **COOKING** A cake recipe calls for $\frac{1}{3}$ cup of flour and $\frac{1}{4}$ cup of sugar. Is there more sugar or flour in this cake? _____

- 2 **LITERATURE** The chart shows how much of a book was read.

Student	Amount of Book Read
Kenneth	$\frac{1}{6}$
Victoria	$\frac{1}{9}$
Thomas	$\frac{1}{4}$

Who has read the most of the book? _____

Who has read the least of the book? _____

- 3 **GARDENING** There are 12 sections in Yolanda's garden. She wants to plant a different type of flower in each unit fraction of the garden. How many varieties of flowers is Yolanda going to plant? _____

- 4 **AGRICULTURE** Farmer Melendez and Farmer Bonilla have the same amount of land. Farmer Melendez plants corn on $\frac{1}{2}$ of his land. Farmer Bonilla plants corn on $\frac{1}{3}$ of his land. Who plants more corn? _____

- 5 **FITNESS** Carol jogs for $\frac{1}{4}$ of an hour every day. Abigail jogs for $\frac{1}{6}$ of an hour every day. Who jogs longer? _____

- 6 **PUZZLES** I am a rectangular strip of paper cut into 7 equal sections. What unit fraction describes one of my sections? _____

- 7 **NUTRITION** Ravi eats $\frac{1}{10}$ of his carrots during snack. John eats $\frac{1}{5}$ of his carrots during snack. Who eats more carrots during snack? _____

- 8 **FINANCE** Percy, Natasha, and Shirley earn the same allowance each week. Percy saves $\frac{1}{10}$ of his allowance inside a piggy bank. Natasha saves $\frac{1}{4}$ of her allowance inside a piggy bank. Shirley saves $\frac{1}{6}$ of her allowance inside a piggy bank. Who saves the most money? _____

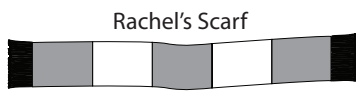
Practice: Problem Solving

Solve.

- 1 KNITTING** Rachel and Lionel each knit a scarf 60 inches long. The scarves are shown below. What fraction of Rachel's scarf is white? _____

What fraction of Lionel's scarf is white? _____

Do Rachel and Lionel have equal amounts of white in their scarves? Explain.



Rachel's Scarf



Lionel's Scarf

- 2 LUNCH** John cut his 12-inch submarine sandwich into 12 equal pieces. He ate 2 pieces. Juanita cut her 12-inch submarine sandwich into 6 equal pieces. She ate the same amount as John. How many pieces of her sandwich did Juanita eat? _____



John's Sandwich



Juanita's Sandwich

- 3 DESSERT** Sylvia made a blueberry pie and cut it into 6 pieces. Thelma made a blueberry pie and cut it into 12 pieces. How many pieces of Thelma's pie equal 2 pieces of Sylvia's pie? _____

- 4 BASEBALL** Anton and Julian both pitched in Friday's little league game. Anton threw 45 pitches of which 18 were strikes. Julian threw 40 pitches of which 16 were strikes. Who threw the greater fraction of strikes in Friday's game?

Practice: Problem Solving

Solve.

- 1 **DESSERT** Jenna baked apple pies for a family reunion. Each pie was cut into 9 pieces. Her family ate 28 pieces of pie. Write an improper fraction and a mixed number to represent the number of pies Jenna's family ate
- _____
- 2 **SNACKS** Jamal had a bag of oranges to share with his friends. He divided each orange into four equal pieces. Sixteen orange sections were eaten. How many whole oranges did Jamal and his friends eat?
- _____
- 3 **HOBBIES** Michele used strips of wood to make square picture frames. Each strip of wood was of equal length. She cut each strip into 7 equal pieces and used a total of 20 pieces for the frames. Write an improper fraction and a mixed fraction to represent the number of strips of wood Michele used.
- _____
- 4 **PACKAGING** Carlotta bought boxes of snack bars at the grocery store. Each box contained 6 snack bars. During the week, her family ate 15 snack bars. How many whole boxes of snack bars did her family eat?
- _____
- 5 **PACKAGING** Henry bought 3 packs of tomatoes to make salsa. Each pack has 4 tomatoes in it. He used a total of 9 tomatoes. Write an improper fraction and a mixed number to represent the number of packs of tomatoes Henry used.
- _____
- 6 **PICNICS** Mrs. Meyers bought three jugs of lemonade for a school picnic. Each jug contained 16 cups of lemonade. Students drank a total of 39 cups of lemonade at the picnic. Write an improper fraction and a mixed number to represent the number of jugs of lemonade the students drank.
- _____

Practice: Problem Solving

Solve.

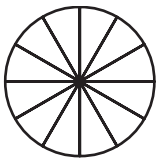
- 1 **DRINKS** Brooke is using a recipe to make cookies. She needs $\frac{2}{3}$ cup of sugar. She also needs $\frac{3}{4}$ cup of brown sugar. Write the amount of sugar and brown sugar with a common denominator. _____

- 2 **FOOD** Jeremy bought $\frac{3}{4}$ pounds of American cheese and $\frac{5}{6}$ pounds of roast beef. What is the least common denominator of the 2 deli products? _____

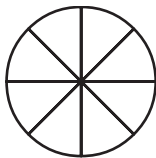
- 3 **SNOW** Center City received $6\frac{1}{4}$ inches of snow. Leonardtown received $6\frac{3}{8}$ inches of snow. How much snow did the two places receive using common denominators? _____

- 4 **TRANSPORTATION** Two cars on a train contain an equal number of seats. Three-fourths of the seats in the first car are filled. Eleven-twelfths of the seats in the second car are filled. What is the least common denominator of the fractions representing the filled seats in each car? _____

- 5 **PIZZA** Mrs. Tyler ordered two pizzas. One pizza was cheese and one was pepperoni. The cheese pizza was cut into 12 pieces. The pepperoni pizza was cut into 8 pieces. Her family ate 10 pieces of the cheese pizza and 7 pieces of the pepperoni pizza. What is the fraction of each pizza eaten using a common denominator? _____



Cheese



Pepperoni

Practice: Problem Solving

Solve.

- 1 MUSIC** Chris listened to three songs. The lengths of the songs are shown in the table below. Which song has the greatest length? _____

Songs	
Name	Length (min.)
<i>The Long Road</i>	$3\frac{5}{6}$
<i>Skateboard</i>	$3\frac{3}{4}$
<i>Climb High</i>	$3\frac{1}{2}$

- 2 SHOPPING** Maria bought $\frac{1}{2}$ pound of white potatoes, $\frac{3}{4}$ pound of red potatoes, and $\frac{7}{8}$ pounds of sweet potatoes. Which kind of potato weighed the least? _____

- 3 HARVEST** Three friends went to a farm to pick strawberries. The table shows the amount each person picked. Who picked the greatest amount of strawberries? _____

Strawberries Picked	
Name	Weight (lbs.)
Lionel	$1\frac{7}{8}$
Duncan	$1\frac{5}{6}$
Jorge	$1\frac{3}{4}$

- 4 PIZZA** Three friends each ordered a small cheese pizza for lunch. Carolina ate $\frac{4}{9}$ of her pizza. Sharona ate $\frac{3}{8}$ of her pizza. Leona ate $\frac{1}{3}$ of her pizza. Who ate the least amount of pizza? _____

- 5 GARDENING** Manuel plants a vegetable garden every spring. Tomato plants use $\frac{1}{3}$ of the garden space. Pepper plants use $\frac{1}{6}$ of the garden space. Squash plants use $\frac{1}{2}$ of the garden space. Which vegetable takes up the greatest amount of space in the garden? _____

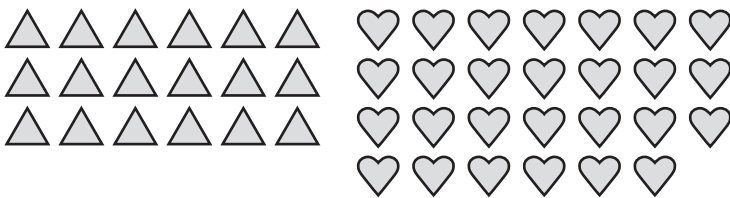
- 6 BASKETBALL** Melanie and Alicia both played in last week's basketball game. Melanie threw 10 foul shots and made 6 of them. Alicia threw 8 foul shots and made 6 of them. Who made the greater fraction of foul shots? _____

Practice: Problem Solving

Solve.

1 RAIN During the month of April, it rained on 8 days. What is the fraction of days it rained in April in simplest form? (Hint: There are 30 days in April.)

2 BRACELETS Laurie is making two bracelets using heart-shaped and triangle-shaped beads. She wants to use an equal number of beads on each bracelet, with no beads left over. What is the greatest number of each shape she can use on both bracelets?



3 BOOKS Hector divided the books he read last year into four categories. In simplest form, what fraction of the books are mystery books?

Book Categories	
Category	Number
Mystery	8
Science Fiction	12
History	4
Biography	4

4 BASEBALL A baseball pitcher threw a total of 75 pitches in a ballgame. Forty of those pitches were strikes. In simplest form, what fraction of the pitches were strikes?

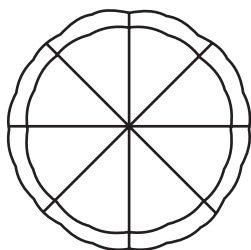
5 MUSIC The school orchestra contains 32 musicians. There are 10 musicians in the brass section. In simplest form, what fraction of the orchestra is the brass section?

6 TESTS A math test has a total of 100 questions. Darla got 84 questions correct. A science test has 25 questions. Darla got the same score on the science test as she did on the math test. How many questions did Darla answer correctly on the science test?

Practice: Problem Solving

Solve. Write your answer in simplest form.

- 1 **FOOD SERVICE** The *Family Restaurant* is offering the blueberry pie shown below. The waiter serves 4 pieces to one table and 2 pieces to another table. How much of the whole pie has been served?



- 2 **DRINKS** Toshiro is making 10 liters of punch. He adds 2 liters of apple juice, 5 liters of orange juice, and 3 liters of soda. What fraction of the punch is juice?

- 3 **BIOLOGY** Ines is looking at a total of 100 cells with a fluorescent microscope. She notices $\frac{20}{100}$ are glowing red, $\frac{35}{100}$ are glowing green, and $\frac{45}{100}$ are glowing blue. What fraction of the cells is glowing either red or blue?

- 4 **AGRICULTURE** Elan collected 36 eggs. Of the 36, 4 eggs are dirty, and 8 are cracked. If he must throw out all the dirty and cracked eggs, what fraction of eggs does he need to throw out?

- 5 **CONSTRUCTION** Samir buys 50 pieces of wood to begin building a deck. Using the table below, what fraction of the wood is 2 inches wide?

Size of Wood	Number of Pieces
2 × 6	5
2 × 4	20
1 × 4	25

- 6 **FOOTBALL** At the football game, the home team got 20 first downs. During the first quarter they got 3 downs. They got 2 downs in the second quarter, 7 in the third, and 8 in the fourth. What fraction of first downs did the home team get in the first 2 quarters?

- 7 **PACKAGING** Mr. Flores packs 48 books into a box. The box contains $\frac{19}{48}$ novels, $\frac{13}{48}$ biographies, and $\frac{16}{48}$ children's books. What fraction of the books are novels and biographies?

Practice: Problem Solving

Solve. Write in simplest form.

- 1 **FOOD** Kimoko buys 45 apples at an apple farm. Of these, $\frac{5}{9}$ are Gala apples. He decides to give $\frac{3}{9}$ of the Gala apples to Roberta. Write a fraction to represent the number of Gala apples Kimoko has remaining. _____

- 2 **LANDSCAPING** Ravi is designing a pump to deliver water to 2 sprinklers. The pump can deliver $\frac{5}{8}$ gallon of water per minute. One of the sprinklers uses $\frac{2}{8}$ gallon of water per minute. How many gallons of water will the other sprinkler receive per minute? _____

- 3 **MUSIC** Makalla's CDs take up $\frac{4}{5}$ of the shelves on her CD shelf. At a yard sale, she sells 1 full shelf of her CDs. What fraction of the CD shelves is full after the yard sale? _____

- 4 **COOKING** Yahto has $\frac{7}{8}$ cup of milk. He needs $\frac{2}{8}$ of a cup of milk to make macaroni and cheese. How much milk will Yahto have left to make chocolate milk? _____

- 5 **HOBBIES** Annie collected 23 of the 50 state quarters, but she lost 5 of the quarters. What fraction of the state quarters does Annie have now? Write the fraction in simplest form. _____

- 6 **MOVIES** Russell has 32 DVDs in his collection. Of all of his DVDs, 18 of them are westerns. What fraction of his collection is not westerns? _____

- 7 **SEWING** Keisha bought $\frac{9}{10}$ of a yard of fabric to make a dress. She measures and uses $\frac{7}{10}$ of a yard for the dress. How many yards of fabric does Keisha have left after she makes the dress? _____

- 8 **COOKING** Masan buys $\frac{5}{6}$ pound of carrots at the market. He uses $\frac{3}{6}$ pound to make stew. How many pounds of carrots does Masan have left? _____

Practice: Problem Solving

Solve.

- 1 **PARTY** Bruno bought $\frac{3}{4}$ pound of cheese for a party. After the party, $\frac{2}{3}$ of the cheese was left. How many pounds of cheese were left after the party? _____

- 2 **FASHION** Reginald has 9 pairs of jeans and 3 pairs of khaki pants, shown below. Three pairs of jeans have holes in the knees. What fraction of all of his pants has holes in the knees? _____

- 3 **BIOLOGY** Cierra has a test tube of cells. She needs to use $\frac{1}{5}$ of the cells to make new cells. Of this $\frac{1}{5}$, she puts $\frac{2}{7}$ into Petri dishes. What fraction of the total amount of cells did she put into the Petri dishes? _____

- 4 **DESSERT** Nyoko is making cookies. The recipe requires $\frac{1}{3}$ cup of sugar for 1 batch of cookies. How much sugar will Nyoko need for 5 batches of cookies? _____

- 5 **COMPUTERS** Vara's hard drive is $\frac{2}{3}$ full with current files. If Vara saves $\frac{2}{3}$ of the current files and deletes the rest. How full is her hard drive after deleting the files? _____

- 6 **FITNESS** Tess runs 15 of the 30 days in June. If she runs $\frac{2}{3}$ of a mile each time, about how many miles does she run during the month of June? _____

- 7 **BUSINESS** A copy machine, for an office, works properly $\frac{4}{5}$ of the time. The copy machine has paper $\frac{5}{6}$ of the time. What fraction of time is the copy machine working the way it should? _____

- 8 **CONSTRUCTION** Doug is building with $\frac{1}{8}$ " thick boards of plywood. He stacks 3 boards to make a beam. How thick is the beam? _____

Practice: Problem Solving

Solve.

- 1 **COOKING** Deepak made $\frac{4}{5}$ of a gallon of soup to feed 8 of his friends. How much soup did each of his friends get? _____

- 2 **ADVERTISING** An hour long talk show plays 10 commercials in $\frac{1}{3}$ hour of advertising time. Assuming each commercial is equal in length, how long is each commercial as a fraction of the hour? _____
How long is each commercial in minutes? _____

- 3 **CHEMISTRY** Camille is working with a beaker of solution filled to the $\frac{2}{5}$ L mark. She needs to divide the solution evenly between 6 test tubes. How much solution should she pour into each test tube? _____

- 4 **BUSINESS** Mr. Valdez spent $\frac{2}{6}$ of his work day in meetings on Friday. He had 3 meetings that each took the same amount of time. As a fraction of his work day, how long was each of Mr. Valdez's meetings? _____

- 5 **TRAVEL** Lloyd and 3 of his friends drove to the mountains for the weekend. After driving $\frac{2}{10}$ of the distance, Lloyd was too tired to drive anymore. His friends each drove equal distances for the remainder of the trip. How much of the distance did each of Lloyd's friends drive? _____

- 6 **MACHINERY** One machine runs for $\frac{8}{9}$ of a shift. The machine spends an equal amount of time on 4 different tasks. As a fraction of the shift, how long does the machine spend on each task? _____

- 7 **CONSTRUCTION** Chenoa is building a dog house. She has one piece of wood that is $\frac{6}{7}$ of a yard long. She needs to cut it into 6 equal pieces. How long should she cut each piece? _____

- 8 **MARKET RESEARCH** A survey company was hired by a local grocery store to survey its customers. The company has completed $\frac{1}{10}$ of the surveys. There are 9 workers assigned to complete the remaining surveys. What fraction of the surveys is assigned to each worker? _____

Practice: Problem Solving

Solve.

- 1 **ENGINEERING** Hakan is designing a prototype using two metal plates. One plate is $\frac{1}{32}$ of an inch thick and the other is $\frac{3}{8}$ of an inch thick. If Hakan places one plate on top of the other, what is the overall thickness of the plates?

- 2 **FITNESS** Mi-Ling walked $\frac{3}{4}$ of a mile in the morning, $\frac{5}{8}$ of a mile during lunch, and $\frac{1}{2}$ mile after dinner. How many miles did Mi-Lin walk in all?

- 3 **CHEMISTRY** Tracy is mixing an alcohol solution in the lab. She adds $\frac{1}{4}$ of a liter of rubbing alcohol to a beaker of water filled to $\frac{7}{10}$ liters. What is the total volume of Tracy's solution?

- 4 **HOBBIES** Sook is making a model airplane and decides that the balsa wood he is using is not thick enough. He glues together two pieces of wood to make a thicker piece. One is $\frac{3}{16}$ of an inch thick, and the other is $\frac{1}{8}$ of an inch thick. How thick is Sook's new piece of wood?

- 5 **FINANCES** Mr. Hawkins gets two bonuses every year. This year, his first bonus was $\frac{1}{6}$ of his base salary, and his second bonus was $\frac{1}{8}$ of his base salary. As a fraction of his base salary, what was Mr. Hawkins total bonus for this past year?

- 6 **LANDSCAPING** Kaga connected two small sprinklers to water her front lawn. The first sprinkler is delivers $\frac{5}{16}$ of a gallon per minute, while the second sprinkler delivers $\frac{7}{8}$ of a gallon per minute. If both sprinklers are running at full pressure, how many gallons of water per minute will she be using?

- 7 **DESSERT** Mario is making cookies and a cake for a bake sale. He needs $\frac{3}{4}$ of a cup of sugar for the cookies, and $\frac{2}{3}$ of a cup of sugar for the cake. How much sugar does Mario need in all?

- 8 **CONSTRUCTION** Tara's truck can hold $\frac{1}{2}$ ton. She puts $\frac{3}{16}$ of a ton of gravel in the truck, and then adds $\frac{3}{8}$ of a ton of concrete mix. Will Tara exceed the recommend weight allowance of her truck? Explain.

Practice: Problem Solving

Solve.

- 1 **PHOTOGRAPHY** Rohan's digital camera is $\frac{7}{8}$ full of pictures. He deletes $\frac{9}{64}$ of the used space on the digital camera. How full is Rohan's camera now? _____

- 2 **DRINKS** Twyla has $\frac{1}{2}$ gallon of milk. She pours $\frac{1}{6}$ of a gallon into a glass. How much milk is left in the carton? _____

- 3 **CHEMISTRY** Doris is making a sodium chloride solution and needs $\frac{11}{15}$ of a gram of salt. She only has $\frac{3}{4}$ of a gram of salt. Does Doris have enough salt to make her solution? Explain. _____

- 4 **HOBBIES** Ting is trying to make a model car that has a $\frac{3}{7}$ horsepower motor. He decides to combine a $\frac{1}{3}$ horsepower motor, which he already has, with a new motor. What is the smallest motor he must buy so that the car's motor has $\frac{3}{7}$ total horsepower? _____

- 5 **TECHNOLOGY** Shada's battery on her laptop will last for $\frac{3}{4}$ hour. She uses it for $\frac{2}{5}$ hour. How much longer will Shada's battery last? _____

- 6 **FINANCES** Peyton won $\frac{3}{4}$ of a million dollars in the state lottery. He has to pay $\frac{2}{7}$ of a million dollars in federal and state taxes. How much money does Peyton get to keep? _____

- 7 **PARKS** Noah is designing a new park on a strip of land that is $\frac{3}{8}$ of a mile long. The entrance and parking area will take up $\frac{1}{10}$ of a mile. How much land remains for the fields and other structures in the park? _____

- 8 **CONSTRUCTION** Shareef built a birdhouse with a piece of wood that was $\frac{7}{12}$ meters long. If he has a $\frac{1}{3}$ meter long piece of wood left over, how much wood did he use for the birdhouse? _____

4-1 Practice: Problem Solving

Solve. Write in simplest form.

- 1 **RACING** Judy is racing her dragster on a $\frac{1}{4}$ mile track. If she resets her odometer to 00.00, what should her odometer read after 1 lap around the track? _____
- 2 **TOOLS** Brandon needs to make a 0.625 inch hole in a piece of wood. The drill bits he has are $\frac{3}{8}$ inch, $\frac{5}{8}$ inch, and $\frac{7}{8}$ inch in diameter. Which one should he use to drill the hole? _____
- 3 **TRIATHLON** Becky is training for a triathlon. To practice, she swims three-fourths of a kilometer 3 times a week. How many kilometers does Becky swim week in decimal notation? _____
- 4 **HORSEBACK RIDING** Sergio rode his horse for $3\frac{14}{25}$ miles. What is the decimal equivalent of this distance? _____
- 5 **RUNNING** Sabrina and Aashi raced each other in a 100m sprint. Their stop watches are shown below. Who won the race and by how many hundredths of a second? _____



Sabrina



Aashi

- 6 **ENGINEERING** Andre is designing a power system that uses a motor with rating of $\frac{3}{4}$ hp. He tests the motor with a device that reads horsepower in decimal units. What value should the testing device read? _____
- 7 **TRAVEL** Tia's mother told her they would need to drive four hundred eighty-two and sixty-three hundredths miles to Mount Rushmore. What is the distance as a decimal? _____
- 8 **BIOLOGY** In Biology class, Adita's frog weighed $1\frac{4}{10}$ kg. What is the decimal equivalent of the frog's weight? _____

4-2 Practice: Problem Solving

Solve. Write in simplest form.

- 1 **GROCERY** Abigail bought milk for \$2.79 and crackers for \$2.39 at the grocery store. How much did she spend? _____

- 2 **FLOWERS** Tabitha owns a flower shop. She buys roses for \$18.75 per dozen and she sells them for \$39.99 per dozen. What is Tabitha's profit from selling one dozen roses? _____

- 3 **CARS** Kyle wanted to trade in his car for a new car. The dealer he went to was advertising a promotion for \$500 off all new cars and trucks. Kyle traded in his old car for \$6,240.50 and bought a new car that was priced at \$16,999.00. How much did Kyle pay for his new car? _____

- 4 **FOOD SERVICE** Paulina goes out to dinner with three of her girlfriends. Their final bill is \$48.00. They want to split 15% of the bill for the server's tip. How much does each girl owe for the tip? _____

- 5 **BASEBALL** Charo went to a baseball game with his family. They bought 4 sodas, 3 hot dogs, and 3 pretzels for lunch. The prices are listed in the table below. How much did they spend on concessions? _____

Food	Price
Soda	\$2.25
Pretzel	\$1.75
Hot Dog	\$2.50

- 6 **LANDSCAPING** Della and Kata landscaped Ms. Singh's yard for 3 hours. Ms. Singh agreed to pay \$15.00 per hour for both girls to work. How much does she owe the two girls? If the girls split their earnings, what bills will each girl receive? _____

- 7 **SALARY** Gaia earned \$7.25 per hour at her job after school. Last month she got a raise of \$0.45 per hour. How much does Gaia earn now? _____

Practice: Problem Solving

Solve.

- 1 MANUFACTURING** Amalia works in Quality Assurance. She needs to measure the vibration of motors. The motors should not measure more than 1.65 m/s^2 . She measures six motors at 1.01 m/s^2 , 1.09 m/s^2 , 0.58 m/s^2 , 1.58 m/s^2 , 1.73 m/s^2 , and 1.64 m/s^2 . Order these vibrations from least to greatest. Are all of the motors within the specifications?

- 2 MEASUREMENT** Coach Torres measured the height of his players for the basketball team photo. The players were 78.5 inches, 73.2 inches, 75.7 inches, 79.2 inches, 71.3 inches, 73.1 inches, 78.7 inches, and 79.5 inches. What is the correct order of the player's heights from shortest to tallest?

- 3 BASEBALL** Marcos wants to know which of his friends has the best batting average and which has the worst batting average. Look at the list below. Which is the greatest batting average and which is the least?

Batting Averages
0.273
0.325
0.371
0.313
0.269

- 4 BIOLOGY** Makalla has four tubes, each with a different concentration of cells. What is the order of these concentrations from least to greatest?

Concentration of Cells
0.39 cells/mL
0.37 cells/mL
0.35 cells/mL
0.38 cells/mL

Practice: Problem Solving

Solve.

1 BAKING Manu is baking cookies. His recipe requires $\frac{3}{4}$ cup of butter. He has 0.9 cup of butter. Does Manu have enough butter? Explain.

2 FRUIT Sarala goes to the farmer’s market to buy a basket of apples. She wants to buy the heaviest basket. Which basket should Sarala buy?

Apples	Weight
Basket A	2.3 lbs.
Basket B	$2\frac{1}{4}$ lbs.
Basket C	2.1 lbs.

3 CHEMISTRY Lise measures the pH of five solutions. They are 7.15, $7\frac{1}{4}$, 7.22, $7\frac{5}{10}$, and 7.6. What is the order of pH levels from greatest to least?

4 CONSTRUCTION Tansy needs to adjust the door frame in order to install a new door. She tries a $\frac{1}{2}$ inch thick board and it is too narrow. Then she tries a 0.75 inch thick board and it is too wide. She finds two more pieces of scrap wood, one that is 0.78 inches and one that is 0.63 inches. Which piece should Tansy try next? Explain.

5 MANUFACTURING Kavi is a machinist. He needs to make a part that is 12.37 inches by 3.65 inches. He has stock material that is $12\frac{1}{4}$ inches by $3\frac{70}{100}$ inches, $13\frac{2}{10}$ inches by $3\frac{2}{5}$ inches, and $12\frac{45}{100}$ inches by $3\frac{9}{10}$ inches. Which size material should Kavi use?

Practice: Problem Solving

Solve.

- 1 **BIKING** Yesterday, Angelica biked 6.73 miles from her house to the park. Then she biked 14.62 miles from the park to a lake. Then she biked 11.15 miles back to her house. How many miles did Angelica bike? _____

- 2 **CHEMISTRY** Diego mixed 10.37 mL of solution with 1.28 mL of water. How much liquid does Diego have now? _____

- 3 **WELDING** Ella welded a 2.46 inches thick piece of steel to a 0.75 inches thick piece of steel. How many inches thick is the new piece of welded steel? _____

- 4 **COMPUTERS** Sanson needs to put two files on his flash drive. One file is 63.8 MB and another file is 62.77 MB. His flash drive can hold 128 MB of data. Will both files fit on the flash drive? Explain.

- 5 **ENGINEERING** Yada is designing a sprinkler system with two lines. One of the lines will have a flow of 2.17 gallons per minute. The other line will have a flow of 1.64 gallons per minute. What will be the total flow of water when both lines are running? _____

- 6 **BAKING** Yong needs 7 pounds of apples to make four apple pies. He buys two bags of apples—one is 3.28 lbs. and the other is 3.73 lbs. Does Yong have enough apples to make four pies? Explain.

- 7 **BUSINESS** Kasa keeps track of her mileage for her expense reports. She resets her odometer before each business trip. On Monday, she drives to visit AB Company. At the end of the day Monday, her odometer reads 88.2 miles. On Thursday, she drives to ZY Corporation. At the end of the day on Thursday, her odometer reads 45.9 miles. How many total miles did Kasa travel on business this week? _____

Practice: Problem Solving

Solve.

- 1 GROCERY** Emma bought several items at the grocery store. She gave the clerk \$20 to pay for her total bill of \$12.54. How much change did Emma receive?

- 2 GYMNASTICS** Imani earned a score of 38.68 in her qualifying event. She later earned a score of 39.82 in the final event round. How much did Imani improve her score from the qualifying round to the final round?

- 3 BASEBALL** One measure of a baseball pitcher's performance is his earned run average, a statistic found using the number of earned runs given up while pitching. In his junior year of high school, Charo had an earned run average of 6.19; in his senior year he had an earned run average of 5.43. How much better was Charo's earned run average in his senior year than in his junior year?

- 4 BUTCHER SHOP** Lorena needs 3 pounds of ground beef for a new spaghetti recipe. The butcher scale reads 2.85 pounds. How much should the butcher add to the scale to get the amount of ground beef that Lorena needs?

- 5 COMMUNITY SERVICE** To earn a badge in her service organization, Kate is working 24 hours at a local hospital. The first weekend, she works 8.25 hours. The second and third weekends she works 6 hours and 5.5 hours respectively. If Kate completes her work in one month, how many hours will she work during her last weekend?

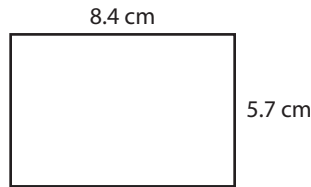
- 6 POPULATION** China and India have the largest populations of any countries in the world. The population of China is approximately 1.31 billion people. The population of India is approximately 1.08 billion people. How many more people live in China than in India?

- 7 GEOGRAPHY** Russia has the largest land area in the world. Its land area covers 17 million square kilometers. The land area of the United States is 9.16 million square kilometers. How much larger is Russia than the United States in land area?

Practice: Problem Solving

Solve.

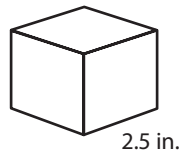
- 1 GEOMETRY** The area of a rectangle is found using the formula $A = l \times w$, where A is the area of the rectangle, l is the length of the rectangle, and w is the width of the rectangle. What is the area of this rectangle?



- 2 BUSINESS** Elise charges \$12.50 per hour to tutor students in math. She tutored for 2.75 hours last night. How much money did she earn? Round to the nearest cent if necessary.

- 3 GIFTS** Leon has 8 nieces and nephews. As a holiday gift, he will give each niece and nephew a gift certificate for a movie ticket, popcorn, and a soda. If each gift certificate costs \$8.75, how much did Leon spend on the gifts? Round to the nearest cent if necessary.

- 4 GEOMETRY** The volume of a cube is found using the formula, $V = s^3$ where V is the volume of the cube and s is the length of an edge of the cube. What is the volume of this cube?



- 5 FINANCE** Harold invested \$200 at 5% interest compounded annually for 4 years. The calculation 200×1.05^4 can be used to find the value of his investment at the end of a 4 year period. What is the value of Harold's investment after 4 years? Round to the nearest cent if necessary.

Practice: Problem Solving

Solve.

- 1 **MONEY** Keenan works at a movie theater, selling tickets on the weekend. He worked 14 hours one weekend and earned \$102.90 (no tax taken out). What was Keenan's hourly wage? _____
- 2 **COOKING** Mac is making brownies. The recipe calls for 1.5 cups of flour and 1.25 cups of sugar. He only has a $\frac{1}{4}$ -cup measuring cup. How many times will Mac fill the cup with each of these ingredients? _____
- 3 **BASEBALL** In baseball, the term ERA stands for "Earned Run Average." It is a statistic used to evaluate the success of a pitcher. The lower the ERA, the better the pitcher. The ERA is found by using the formula, $ERA = (ER \times 9) \div IP$, where ER is the number of earned runs and IP is the number of innings pitched. Pedro is a pitcher. In a game, there were 5 earned runs against Pedro and he pitched for 7 innings. What is his ERA? _____
- 4 **MEASUREMENT** There are approximately 2.54 centimeters in 1 inch. A square picture frame measures 45.72 centimeters on each side. How many inches does each side of the frame measure? _____
- 5 **TRAVEL** Cheyenne drove 978.3 miles making deliveries for her job. She did this in 4.5 days. On average, how many miles did Cheyenne travel each day? _____
- 6 **MEDICINE** A medicine bottle contains 33.75 ounces. Each pill contains 2.25 ounces of medicine. How many pills are in the entire bottle? _____
- 7 **AVERAGE** An arithmetic average is found by finding the sum of a set of numbers, and dividing the sum by the number of items added together. Consider the heights of the five starters on a high school basketball team:
5.83 ft, 6.25 ft, 5.92 ft, 6.75 ft, 6.42 ft
What is the average height of these players, rounded to the nearest hundredth? _____
- 8 **GROCERY** Muna purchased a can of tuna that is 6.5 ounces for \$1.56. What is the unit price for 1 ounce of this tuna? _____

Practice: Problem Solving

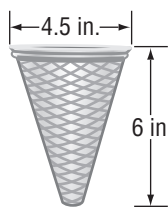
Solve. Name the operation you used.

- 1 **MEASUREMENT** There are approximately 1.61 kilometers in 1 mile. Rafael drove 62 kilometers. How many miles did Rafael drive? _____

- 2 **TEMPERATURE** The formula to convert a Celsius temperature to its Fahrenheit equivalent is $^{\circ}F = \frac{9}{5} \times C^{\circ} + 32$, where $^{\circ}F$ is the Fahrenheit temperature in degrees, and $^{\circ}C$ is the Celsius temperature in degrees. A thermometer reads $-10.5^{\circ}C$. Convert the Celsius temperature to its Fahrenheit equivalent. _____

- 3 **HIGHWAY** A highway grade is found by dividing the change in the vertical height road by the horizontal distance over which the change occurs. Often this value is given in a percent. If a 25-miles stretch of highway has a 1.2 mile vertical change, what is the grade of this highway section? _____

- 4 **GEOMETRY** The lateral surface area of a cone is found with the formula $LSA = \pi \times d \times h$, where LSA is the lateral surface area of the cone, π represents a number approximately equal to 3.14, d is the distance across the cone, and h is the height of the cone. What is the lateral surface area of this cone? _____



- 5 **SPEED** The first race at the Daytona International Speedway was held in 1959. Bob Welborn won the pole position with a qualifying speed of 140.21 miles per hour. The 2006 Daytona 500 pole position was won with a speed of 189.15 miles per hour by Jeff Burton. How much faster was Burton's qualifying speed than Welborn's? _____

