

SPECTRUM®

Word Problems

**GRADE
8**



Focused Practice to Master Word Problems

- Real world applications
- Multi-step word problems
- Whole numbers, decimals, and fractions
- Ratio and proportion
- Percents and interest
- Metric and customary measurement
- Graphs, probability, and statistics
- Geometry
- Perimeter, area, and volume
- Preparing for algebra



Download the **free Carson-Dellosa PEEK app** and bring this product to life!



Check What You Know

Whole Numbers, Decimals, and Fractions

Read the problem carefully and solve. Show your work under each question.

The Ortiz and Johnson families decide to go on a summer vacation together.

1. On three consecutive days, the families drove their cars 450 miles, 325 miles, and 236 miles. How many total miles did they drive on those days?

_____ miles
2. Along the highway, the children see a sign stating that Old Towne is $36\frac{1}{3}$ miles away and Bridgeway is $52\frac{1}{4}$ miles away. How far is it from Old Towne to Bridgeway?

_____ miles
3. On the second day of the trip, the families go to an amusement park. They purchase 4 adult tickets for \$49.99 each and 8 student tickets for \$31 each. How much money do they get back if they pay with five \$100 bills?

4. After $2\frac{1}{2}$ days, the Johnsons had used $2\frac{2}{3}$ tanks of gas. How many tanks of gas were they using per day?

_____ tanks of gas
5. The Ortiz children were each given \$20 spending money. By the end of day two, Joe had spent $\frac{7}{8}$ of his money, Lila had spent $\frac{3}{4}$ of her money, and Anton had spent $\frac{3}{5}$ of his money. How much money did the Ortiz children spend altogether?

6. The Johnson's car averages 30 miles per gallon of gas. How many gallons of gas did they use on this trip?

_____ gallons of gas

Lesson 1.1 Reducing to Simplest Form

Read the problem carefully and solve. Show your work under each question.

A kindergarten teacher has a bucket of 51 crayons and another bucket of 5 red pencils, 14 blue pencils, and 6 green pencils. The bucket of crayons contains 19 red crayons, 17 blue crayons, 9 green crayons and 6 yellow crayons.

Helpful Hint

Remember to find the **greatest common factor (GCF)** to reduce fractions to their simplest form. The **greatest common factor** is the largest number that can evenly divide into two or more numbers.

1. What is the fraction of red pencils to the total number of pencils written in simplest form?

2. What is the fraction of blue crayons to the total number of crayons written in simplest form?

3. What is the fraction of green crayons to the total number of crayons written in simplest form?

4. The teacher places the crayons and pencils in one bucket. What is the fraction of yellow crayons and green pencils written in simplest form?

5. Pencils come in boxes of 6. The number of boxes of blue pencils in the bucket can be represented by the mixed numeral $2\frac{2}{6}$. What is the number of boxes in simplest form?

Lesson 1.2 Renaming Fractions and Mixed Numbers

Read the problem carefully and solve. Show your work under each question.

Khalil is making his own board game. He needs to purchase special cardboard to make the cards for the game. The cardboard comes in the following widths: $\frac{15}{4}$ inches, $\frac{36}{8}$ inches, $\frac{20}{16}$ inches, $6\frac{5}{7}$ inches, and $8\frac{1}{2}$ inches.

Helpful Hint

A mixed numeral is not in simplest form if:

- the fraction is not reduced
- the fraction is improper

1. Khalil needs to convert the fraction $\frac{15}{4}$ to a mixed numeral in simplest form. What is this fraction as a mixed numeral in simplest form?

2. Change the width $\frac{36}{8}$ inches to a mixed numeral in simplest form.

_____ inches

3. Change the width $\frac{20}{16}$ inches to a mixed numeral in simplest form.

_____ inches

4. Khalil changes the width $6\frac{5}{7}$ inches into an improper fraction. What is $6\frac{5}{7}$ as an improper fraction?

_____ inches

5. Change the width $8\frac{1}{2}$ inches into an improper fraction.

_____ inches

Lesson 1.3 Adding and Subtracting Fractions and Mixed Numerals

Read the problem carefully and solve. Show your work under each question.

Shannon is decorating her new bedroom. She is making a bedspread and curtains from two different fabrics, one solid blue and one with a flower pattern.

Helpful Hint

Remember to rename fractions with the least common denominator and change to simplest form when the fractions have different denominators.

1. Shannon needs $2\frac{2}{5}$ yards of the solid fabric for the bedspread and $2\frac{7}{8}$ yards of the solid fabric for the curtains. How much solid fabric does Shannon need for this project?

_____ yards

2. Shannon needs $2\frac{1}{3}$ yards of the patterned fabric for the bedspread and $2\frac{7}{8}$ yards of the patterned fabric for the curtains. How much patterned fabric does Shannon need for this project?

_____ yards

3. Shannon needs $1\frac{1}{2}$ yards of curtain rod for one curtain and $9\frac{1}{4}$ yards of curtain rod for another curtain. How many yards of curtain rod does Shannon need for both curtains?

_____ yards

4. Shannon needs a total of 6 yards of lining fabric for the curtains. She already has $2\frac{7}{12}$ yards of lining fabric. How much more lining fabric does she need?

_____ yards

5. Shannon's mother gives her $2\frac{1}{4}$ yards of blue solid fabric. How much blue solid fabric does she still need to purchase?

_____ yards

Lesson 1.4 Multiplying Fractions and Mixed Numerals

Read the problem carefully and solve. Show your work under each question.

Cadence is making cookies and muffins for a bake sale.

Helpful Hint

Remember to rename each mixed numeral as an improper fraction before multiplying. Be sure to simplify all fractions.

1. The cookie recipe calls for $1\frac{3}{4}$ cups of flour for 1 batch of muffins. How much flour does Cadence need if she wants to make $2\frac{1}{2}$ batches of muffins?

_____ cups
2. The cookie recipe calls for $\frac{3}{4}$ cup of light brown sugar. How much brown sugar is needed for $2\frac{1}{2}$ batches?

_____ cups
3. Cadence adds $1\frac{1}{2}$ cups of chocolate bits per batch of cookies. How many cups of chocolate bits does she need for $2\frac{1}{2}$ batches?

_____ cups
4. The muffin recipe calls for $\frac{1}{3}$ cup of oatmeal. How many cups of oatmeal does Cadence need if she wants to make $3\frac{1}{4}$ batches?

_____ cups
5. There is $\frac{1}{4}$ teaspoon of salt in each batch of one type of cookie. How much salt is needed for $3\frac{1}{4}$ batches?

_____ teaspoons

Lesson 1.5 Dividing Fractions and Mixed Numerals

Read the problem carefully and solve. Show your work under each question.

Caleb has 5 pieces of scrap wood he will use to make picture frames. The first piece of wood is $2\frac{1}{2}$ yards long. The second piece of wood is $\frac{3}{4}$ yard long. The third piece of wood is $1\frac{1}{8}$ yards long. The fourth piece of wood is $5\frac{1}{5}$ yards long. The fifth piece of wood is $4\frac{8}{10}$ yards long.

Helpful Hint

To divide mixed numerals:

- rename each mixed numeral as an improper fraction
- multiply by the reciprocal of the divisor
- simplify all fractions

1. How many $\frac{1}{4}$ -yard pieces can Caleb cut from the first piece of wood?

_____ pieces

2. How many $\frac{3}{16}$ -yard pieces can Caleb cut from the second piece of wood?

_____ pieces

3. How many $\frac{3}{16}$ -yard pieces can Caleb cut from the third piece of wood?

_____ pieces

4. How many $1\frac{3}{10}$ -yard pieces can Caleb cut from the fourth piece of wood?

_____ pieces

5. How many $\frac{4}{5}$ -yard pieces can Caleb cut from the fifth piece of wood?

_____ pieces



Check What You Learned

Whole Numbers, Decimals, and Fractions

Read the problem carefully and solve. Show your work under each question.

The eighth-grade teachers are making plans for their end-of-year field day. The number of students in each homeroom is: Mr. Chung's, 25 students; Mrs. Bertrand's, 27 students; Mr. Gupta's, 32 students; and Mrs. Ross's, 26 students.

1. School policy requires one chaperone per 10 students at the field day. How many chaperones are needed?
_____ chaperones
2. There will be team events in which $\frac{7}{10}$ of the total number of students will participate. How many students will participate in team events?
_____ students
3. Each homeroom will contribute to purchasing new sporting equipment for the field day. The equipment costs \$356.84. If the cost is split evenly between the 4 homerooms, how much will each homeroom contribute?

4. Mrs. Bertrand buys 5 yards of ribbon to make awards for the students. She cuts the ribbon into $\frac{1}{8}$ -yard pieces. How many pieces will she have?
_____ pieces
5. A group of parents purchased 35 pizzas for the field day. Of the 35 pizzas, 0.6 are cheese pizzas. How many cheese pizzas were purchased?
_____ cheese pizzas
6. During the running events, 15 students ran 0.25 miles, 12 students ran 0.3 miles, and 25 students ran 0.5 miles. How many total miles did these students run?
_____ miles



Check What You Know

Ratio and Proportion

Read the problem carefully and solve. Show your work under each question.

After school, Chang plans to do his homework, take a walk, and cook dinner.

1. Chang can solve 4 math problems in 10 minutes. How long will it take him to solve 30 problems?
_____ minutes
2. Chang reads 18 pages of his history book in 20 minutes. How many pages can he read in 1 hour?
_____ pages
3. Chang wrote a 928-word essay. He types 32 words per minute. How long will it take him to type his paper?
_____ minutes
4. It takes Chang 45 minutes to walk 3 miles. How many miles can he walk in 2 hours?
_____ miles
5. Chang is making biscuits to have with dinner. If 2 tablespoons of baking powder are needed to make 16 biscuits, how many biscuits can Chang make with 5 tablespoons of baking powder?
_____ biscuits
6. Two batches of biscuit batter require 4 cups of flour. Chang will make 3 batches. How much flour does he need?
_____ cups

Lesson 2.1 Ratio and Proportion

Read the problem carefully and solve. Show your work under each question.

Natasha and Alexis each have a bag of marbles and a bag of coins.

Helpful Hint

Use cross multiplication to check if two ratios form a proportion.

1. One fourth of Natalie's marbles are green. Alexis has 15 green marbles out of a total of 64 marbles in her bag. Is the ratio of green marbles to the total amount the same for both bags of marbles?

2. Natalie has 54 blue marbles out of a total of 144 marbles. In Alexis's bag of marbles, $\frac{3}{8}$ of the marbles are blue. Is the ratio of blue marbles to the total number of marbles the same for both bags?

3. Natalie has 27 red marbles out of a total of 144 marbles. Alexis has 12 red marbles out of a total of 64 marbles. Do the ratios of red marbles to the total numbers in each bag form a proportion?

4. Natalie counts 45 pennies out of a total of 85 coins. Alexis has 35 pennies out of a total of 75 coins. Is the ratio of pennies to the total number of coins the same for both bags?

5. Natalie's bag of coins has 17 quarters out of a total of 85 coins. Alexis has 15 quarters out of a total of 75 coins. Do the ratios of quarters to the total number of coins in each bag form a proportion?

Lesson 2.2 Solving Proportion Equations

Read the problem carefully and solve. Show your work under each question.

A group of students is helping to decorate flowerbeds for a local senior center. They will paint rocks different colors to place in the flowerbeds. After they paint the rocks, the children will be served juice and trail mix.

Helpful Hint

When setting up a proportion, be sure to align the units.

No: $\frac{\text{miles}}{\text{hours}} = \frac{\text{hours}}{\text{miles}}$ Yes: $\frac{\text{miles}}{\text{hours}} = \frac{\text{miles}}{\text{hours}}$

3. A group of volunteers is filling baskets to give to the students. It takes 10 minutes to fill 3 baskets. How long will it take to fill 75 baskets?

_____ minutes

1. Jessica can paint 12 rocks in 8 minutes. How many rocks can she paint in 48 minutes?

_____ rocks

4. It takes 6 students to decorate 20 flowerbeds. How many students are needed to decorate 30 flowerbeds?

_____ students

2. Ronnie can paint 8 rocks in 5 minutes. How long will it take him to paint 54 rocks?

_____ minutes

5. Thirty-six ounces of juice will serve 6 students. How many children can be served with 162 ounces?

_____ children