Fill in the blanks with "have" or "owe." The first two are done for you.

1. $-2 =$ owe 2

2. $+4 =$ have 4

3. $-5 =$ _____ 5

4. $-10 =$ _____ 10

5. $+6 =$ _____ 6

6. $+2 =$ _____ 2

7. $-8 =$ _____ 8

8. $-1 =$ _____ 1

Add.

9. $(-5) + (-3) =$

10. $(-14) + (-69) =$

11. $(+93) + (-48) =$

12. $(-27) + (+56) =$

13. $(-8) + (-23) =$

14. $(-8) + (+10) =$

15. (+6) + (–9) =

16. (+3) + (+8) =

17. (–15) + (+6) =

Write your answers as positive or negative numbers.

18. Marcie has $20 in her purse, but she owes $9. How much money does she actually have?

19. George owes $11 to his brother and $13 to his friend. What is the effect on his budget?

20. Mom gave Ashley $8 and Dad gave her $15. By how much has Ashley's cash been increased?

Fill in the blanks with "have" or "owe."

1. −7 = _____ 7

2. +8 = _____ 8

3. +1 = _____ 1

4. −43 = _____ 43

5. −9 = _____ 9

6. +11 = _____ 11

7. −25 = _____ 25

8. −60 = _____ 60

Add.

9. (+5) + (−16) =

10. (+4) + (−2) =

11. (−7) + (−25) =

12. (+5) + (+10) =

13. (+6) + (–9) =

14. (–7) + (+20) =

15. (+14) + (–3) =

16. (+15) + (–6) =

17. (–6) + (+11) =

Write your answers as positive or negative numbers.

18. The team scored 55 points yesterday and 92 today. How many points have they scored in all?

19. Al owed $88. He earned $24 and used it on his debt. How much money does he still owe?

20. Thirty-six gallons of water (–36) splashed out of the pool yesterday. Today ten gallons were lost (–10). What was the total effect on the amount of water in the pool?

Fill in the blanks with "have" or "owe."

1. +16 = _____ 16

2. +5 = _____ 5

3. –13 = _____ 13

4. –2 = _____ 2

5. –71 = _____ 71

6. +3 = _____ 3

7. –87 = _____ 87

8. –15 = _____ 15

Add.

9. (+17) + (–5) =

10. (–63) + (–50) =

11. (+24) + (–36) =

12. (–32) + (–43) =

13. (+98) + (–44) =

14. (–76) + (+84) =

15. (–19) + (–35) =

16. (+48) + (–23) =

17. (–92) + (+29) =

Write your answers as positive or negative numbers.

18. Andrea found 33 coins with her metal detector. She added them to the 44 she had already found. How many coins are now in her collection?

19. Dan owed $91 on a bill. By mistake he sent a check for $120. What is the balance on his account?

20. Michael owes $63 on one bill and $54 on another. Express his total debt as a negative number.

Fill in the blanks with "have" or "owe."

1. −3 = _____ 3

2. +10 = _____ 10

3. −17 = _____ 17

Add.

4. (+24) + (+10) =

5. (+8) + (−15) =

6. (−9) + (−6) =

7. (+42) + (+54) =

8. (−17) + (−47) =

9. (−19) + (+8) =

10. (+78) + (−51) =

11. (−13) + (−12) =

12. (+14) + (−19) =

QUICK REVIEW

To find the fraction of a number, you first divide, then multiply.

EXAMPLE 1 $\frac{2}{3}$ of 6 = ?

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

Select 6 blocks. Divide into 3 equal parts. Count 2 of those parts.

EXAMPLE 2 $\frac{1}{2}$ of 12 = ? $12 \div 2 = 6$ $6 \times 1 = 6$ so $\frac{1}{2}$ of 12 = 6

Find the fraction of the number. The first one is done for you.

13. $\frac{3}{\cancel{4}}$ of $\overset{20}{\cancel{80}}$ = 60

14. $\frac{1}{3}$ of 6 =

15. $\frac{4}{5}$ of 20 =

16. $\frac{5}{6}$ of 24 =

17. There are 18 men on the two baseball teams. Two-thirds of them brought their sons to watch them play. How many brought their sons?

18. There were 100 jelly beans in the bag. If Nathan ate two-fifths of them, how many jelly beans did he eat?

19. Joe took three cans of soup from the pantry shelf last week. Mom bought five cans to put on the shelf. What is the change in number of cans of soup since Joe started eating soup?

20. A business lost $500 last month and $650 this month. Express the total loss as a negative number.

Fill in the blanks with "have" or "owe."

1. $-21 =$ _____ 21

2. $-5 =$ _____ 5

3. $+90 =$ _____ 90

Add.

4. $(-9) + (+4) =$

5. $(-8) + (+19) =$

6. $(+10) + (+23) =$

7. $(+4) + (-1) =$

8. $(-13) + (-6) =$

9. $(-9) + (+87) =$

10. $(-68) + (-41) =$

11. $(+17) + (+35) =$

12. $(-54) + (+16) =$

Find the fraction of the number.

13. $\frac{1}{3}$ of 12 =

14. $\frac{2}{5}$ of 10 =

15. $\frac{7}{9}$ of 18 =

16. $\frac{2}{3}$ of 21 =

17. Joshua rides his bike one-sixth of the day! Since there are 24 hours in a day, how many hours does he ride his bike every day?

18. Jesse usually rides only one-eighth of the day. How many hours is that?

19. Remembering that there are 60 minutes in an hour, find the total number of minutes that Joshua and Jesse ride in a day.

20. Carlos was happy when he found that he had $50. Then he remembered that he owed a friend $60. How much money does Carlos actually have?

Fill in the blanks with "have" or "owe."

1. + 67 = _____ 67

2. –12 = _____ 12

3. –23 = _____ 23

Add.

4. (+6) + (–27) =

5. (–9) + (–3) =

6. (–8) + (–14) =

7. (+5) + (–8) =

8. (+23) + (+69) =

9. (+6) + (–15) =

10. (–3) + (–16) =

11. (–123) + (–341) =

12. (–45) + (+55) =

Find the fraction of the number.

13. $\frac{1}{4}$ of 8 =

14. $\frac{4}{5}$ of 10 =

15. $\frac{3}{7}$ of 21 =

16. $\frac{2}{5}$ of 20 =

17. There are 24 students in the class. Two-thirds of them have brown eyes. How many students have brown eyes?

18. One-fourth of the 24 students wear glasses. How many wear glasses?

19. Kym was given $45 yesterday and $13 today. How much money does she have in all?

20. Matthew drove 91 miles from the starting point. Then he turned around and drove 46 miles back. How far is he from his starting point?

Honors Application Pages

The next page in this book is entitled Honors.

One of the goals of Math-U-See honors pages is to prepare students who will be taking advanced math or science courses. Another objective is to provide challenging and interesting problems which will improve any math student's problem solving skills. In the honors pages you will find problems which do the following:

- Review previously learned material in an unfamiliar context.
- Provide practical application of math skills relating to science or everyday life.
- Challenge the student with more complex word problems.
- Expand on concepts taught in the text.
- Familiarize students with problems that are present in standardized testing.
- Prepare for advanced science courses such as physics.
- Stimulate logical thinking skills with interesting or unusual math concepts.

HONORS 4 – STEP APPROACH TO SUCCESS

In order to get the most benefit from the honors pages, follow these four steps. Master the material in the lesson of the same number before beginning the corresponding honors page.

Step 1. Read
Step 2. Ponder
Step 3. Compare
Step 4. Draw

Step 1. Read

 Most of the honors pages teach new concepts or expand on the concepts taught in the text. Read the explanations carefully. Sometimes you will be led step by step to a new concept. Take your time as you read through the material, and think about each step. Take note of the directions for each set of problems.

Step 2. Ponder

 Someone has suggested that one of the major problems with math instruction in the United States is that students do not take enough time to think about a problem before giving up. One of the purposes of the honors lessons is to train you in problem solving skills. Start by deciding what you already know about the concept being studied, then look for ways to apply what you know in order to solve the problem. Don't be afraid to leave a difficult problem and come back to it later for a fresh look. You will notice that these lessons do not have as many detailed examples as the regular text. In real life, individuals must often use what they know in new or unexpected ways in order to solve a problem.

Step 3. Compare

 Compare your solution to the solution in the back of the instruction manual. If you solved the problem differently, see if you can follow the given solution. There may be more than one way to solve some problems. The solutions may also give you hints that are not on the lesson pages. If you are not able to solve a problem on your own, do not be upset. Much of the honors material was purposely designed to stretch your math muscles. You will learn a great deal wrestling with a problem, and then studying the solution.

Step 4. Draw

 When in doubt, draw! This has always been a maxim of Steve Demme's since his early days in the classroom. Often a picture will help students see the overview of the problem and recognize which math skills are necessary to solve it.

SCHEDULING HONORS PAGES

There are several ways to use the honors pages. Many students who are doing honors will not need to do all the lesson practice pages provided in the student text. Skipping some of the practice pages will provide time to do the honors page for that lesson. Be sure to finish the systematic review pages first, as they provide preparation for the material in the supplement.

If a student needs more time to become comfortable with the new concepts in the text before tackling more advanced problems, he may want to delay each honors lesson until he is two or three lessons ahead in the text. The student may also spread one honors lesson over several days while continuing to work in the text. This approach allows time to come back to difficult problems for a fresh look.

Finally, the honors pages can be saved and worked through during the summer months as a review and as preparation for the next level.

If you have a pre-2009 teacher manual, go online to mathusee.com/solutions.html to access the honors solutions.

If you have a pre-2009 teacher manual, go online to mathusee.com/solutions.html to access the honors solutions.

Read carefully and solve.

1. A reporter decided to take a poll to see how many people in town approved of the new mayor. The reporter called 135 people, and then announced that 2/9 of the people approved of the mayor and 1/5 of them disapproved. The rest of the people he called did not answer or had no opinion.

   How many people said they approved of the mayor?

   How many said they disapproved?

   Which is larger, the number of people who answered the questions or those who did not answer?

2. The state of New York has an area of 49,170 square miles. Rhode Island has an area of 1,250 square miles. How many states the size of Rhode Island would fit into New York State, and how many square miles would be left over?

3. Karen bought two pairs of shoes at $35.99 a pair and a shirt at $15.95. She had a coupon worth $5. How much change should she receive from a $100 bill?

4. Tell what bills and coins Karen should receive in change (see #3) if the clerk gives her the fewest possible of each.

5. Learn-a-Lot Academy needs to order 900 pencils for its students. The pencils come in cases of 24 boxes with 12 pencils in each box. The pencil manufacturer will sell only whole cases. How many cases of pencils must Learn-a-Lot Academy order?

6. If Tammy drives at an average speed of 60 miles per hour (mph) for a distance of 1,260 miles, how long will her trip take?

7. The temperature last evening was 15˚ F. It dropped 33˚ last night (-33). By noon today, it had warmed up only 5˚. Add positive and negative numbers to tell what the temperature was at noon today.

Change to an addition problem, and then solve. The first two are done for you.

1. (–3) – (+4) =
   (–3) + (–4) = –7

2. (–8) – (–9) =
   (–8) + (+9) = +1

3. (+5) – (–2) =

4. (–2) – (–3) =

5. (–6) – (+8) =

6. (+5) – (–7) =

7. (+10) – (+7) =

8. (–3) – (–3) =

9. (+9) – (+1) =

10. (–4) – (+2) =

11. (+30) – (–10) =

12. (+7) – (–8) =

13. (–81) – (–24) =

14. (–17) – (+11) =

15. (+63) – (–92) =

16. (+33) – (+8) =

Write your answers as positive or negative numbers.

17. Alex has no money and he owes Andrew $10. (Express this as -10.) He borrows $6 (or -6) from another friend. Give Alex's balance as a negative number.

18. Norman gave Nate 12 marshmallows and Nate ate six of them. How many does Nate have now?

19. James had no money on Tuesday when he borrowed $20. On Wednesday he paid back $7. How much money does James have now?

20. Jill lost six cents yesterday and eight cents today. What number should she **add** to what she started with to find what she has now?

Change to an addition problem, and then solve.

1. (–2) – (–5) =

2. (–3) – (+6) =

3. (+8) – (–6) =

4. (–4) – (–9) =

5. (–2) – (+7) =

6. (+2) – (–3) =

7. (+8) – (+5) =

8. (–6) – (–6) =

9. (+10) – (+11) =

10. (–5) – (+3) =

11. (+15) – (–7) =

12. (+25) – (–24) =

13. (–23) – (–8) =

14. (+10) – (–8) =

15. (–19) – (+6) =

16. (+81) – (–1) =

Write your answers as positive or negative numbers.

17. Dylan bought a book by mail that cost $15. By mistake he sent in $17. When the company subtracts his payment from the cost of the book, what will be the result?

18. Tim owes $35 to the telephone company and $43 to the electric company. Express what he owes using a negative number.

19. Esther bought 12 apples. If she has eaten three, how many are left?

20. Jason has a leak in his fuel tank. He lost three gallons last week and five gallons this week. What number should he **add** to the amount he started with to find what he has left? (Hint: You will be adding a negative number.)

Change to an addition problem, and then solve.

1. (+12) – (+13) =

2. (–27) – (+41) =

3. (+17) – (–28) =

4. (+27) – (–25) =

5. (–8) – (–8) =

6. (–5) – (+12) =

7. (+4) – (–12) =

8. (–8) – (–3) =

9. (+16) – (+45) =

10. (–13) – (+14) =

11. (+21) – (–43) =

12. (+39) – (–12) =

13. (–9) – (+15) =

14. (–45) – (+11) =

15. (–73) – (–24) =

16. (+61) – (–13) =

Write your answers as positive or negative numbers.

17. Debbie had no money left. She got a bill today for $65 and one for $149. How much money does she have now?

18. Miriam planted 15 pansies. Seven of them died. How many plants are left?

19. Six gallons of water splashed out of the wading pool when Chris jumped in. Five gallons splashed out when his friend Scott jumped in beside him. What number should be **added** to the original amount in the pool to find how many gallons are left?

20. Holly lost 7¢ on Monday and 12¢ on Tuesday. What was the effect on her piggy bank?

Change to an addition problem, and then solve.

1. (–10) – (–10) =

2. (–6) – (+11) =

3. (–6) – (–10) =

4. (–5) – (+7) =

5. (+4) – (–4) =

6. (–8) – (–7) =

Change the signs as needed and solve.

7. (–42) + (–56) =

8. (+19) + (+24) =

9. (+38) – (+95) =

10. (–43) + (+98) =

11. (+63) – (–22) =

12. (–54) – (–58) =

QUICK REVIEW

When adding or subtracting fractions with the same denominator, add or subtract the numerators as indicated and keep the same denominator.

EXAMPLE 1 $\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$

EXAMPLE 2 $\frac{3}{6} - \frac{1}{6} = \frac{2}{6}$

For now, leave your answers in the form in which they occur. We will review reducing fractions in lesson 4.

Add or subtract.

13. $\frac{1}{3} + \frac{1}{3} =$

14. $\frac{5}{8} - \frac{3}{8} =$

15. $\frac{1}{7} + \frac{5}{7} =$

16. $\frac{4}{9} - \frac{2}{9} =$

17. Teresa read 1/5 of the book before lunch and 3/5 after lunch. What part of the book has she read?

18. Mom bought a bag of apples. The bag held 24 apples and she used 2/6 of them to make a pie. How many apples are left over?

Write your answers as positive or negative numbers.

19. Taylor owed $7 to his friends. Taylor's dad gave him $15. After paying his friends, how much money did Taylor have?

20. The vine grew 14 feet, then Mary cut it back 9 feet. How long is the vine now?

Change to an addition problem, and then solve.

1. (+ 12) – (+13) =

2. (–7) – (+4) =

3. (+27) – (–25) =

4. (–6) – (+3) =

5. (–13) – (–14) =

6. (+39) – (–8) =

Change the signs as needed and solve.

7. (+76) – (+26) =

8. (–24) – (+85) =

9. (–35) + (–42) =

10. (+50) + (–51) =

11. (+62) – (–12) =

12. (–23) – (–8) =

Add or subtract.

13. $\frac{3}{10} + \frac{3}{10} =$

14. $\frac{5}{6} - \frac{1}{6} =$

15. $\frac{3}{8} + \frac{2}{8} =$

16. $\frac{9}{11} - \frac{6}{11} =$

17. Millie ate 3/7 of the candies and Sarah ate 2/7 of them. What part of the candies has been eaten?

18. Three-fifths of the birds in my yard were gray. If there were 35 birds in the yard, how many were gray?

Write your answers as positive or negative numbers.

19. Bryan's mom assigned him four hours of housework, and his father gave him five hours of outside work. How many hours of free time have just been added to his schedule?

20. Bryan (see #19) just completed 10 hours of work. Express the time he still has to work for his parents as a positive or negative number.

Change to an addition problem, and then solve.

1. (+4) – (+10) =

2. (–3) – (–6) =

3. (–2) – (+6) =

4. (+7) – (–14) =

5. (+12) – (–48) =

6. (–8) – (+5) =

Change the signs as needed and solve.

7. (–13) + (–11) =

8. (–8) – (+25) =

9. (+37) – (–40) =

10. (–51) + (+73) =

11. (–62) + (– 65) =

12. (–16) – (–18) =

Add or subtract.

13. $\frac{1}{4} + \frac{2}{4} =$

14. $\frac{6}{7} - \frac{5}{7} =$

15. $\frac{5}{9} - \frac{1}{9} =$

16. $\frac{7}{20} + \frac{3}{20} =$

17. Jerry got 2/3 of the test questions right. If there were 30 questions, how many did Jerry get right? How many of the questions were answered incorrectly?

18. Four-tenths of a pie was left in the pan. Mom gave Joel three-tenths of a pie. What part of a pie is left in the pan?

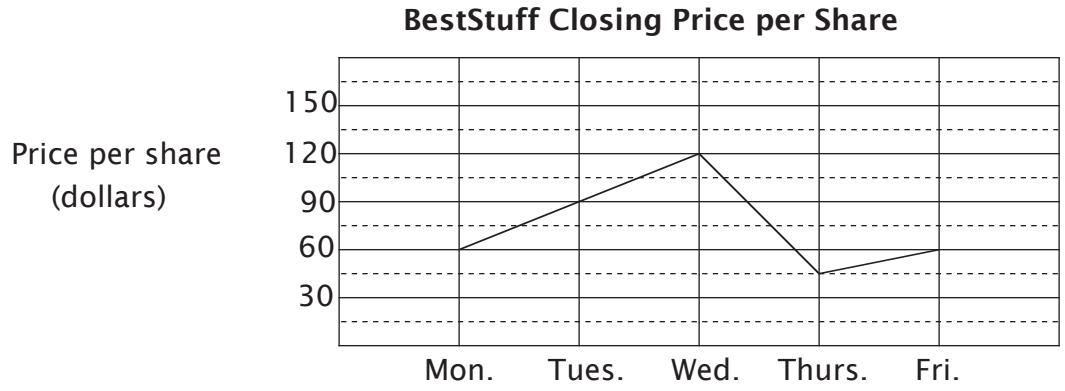
Write your answers as positive or negative numbers.

19. Danica owes $100. She earned $60 and used it all on her debt. What is her financial situation now?

20. Sue was making brownies for the bake sale. Her family ate seven of them. What number must she **add** to the amount she made to find how many she has now?

Read carefully and solve.

1. Optimistic Oliver bought 30 shares of BestStuff stock at the closing price on Monday and sold them at the closing price on Thursday. How much money did Oliver lose on his investment?



2. Seth had one mile to travel. He ran for 3/8 of a mile, jogged for 1/8 of a mile, and ran for another 3/8 of a mile. What part of a mile has he traveled so far? What part of a mile remains?

3. Seth walked for the remaining part of the mile in #2. Tell how many feet in all he ran, how many feet he jogged, and how many feet he walked.

4. A factory can make 21 items per minute. If the factory runs nonstop for a year, how many items can it make in that time? Assume it is not a leap year.

5. Steve recorded the number of gallons of water that leaked out of his pool each day as a negative number. On the days he added water, he recorded the amount as a positive number. His results are listed below.

Day 1	−5	Day 5	+5
Day 2	+4	Day 6	−4
Day 3	−8	Day 7	−6
Day 4	+10		

At the end of seven days, what was the change in the number of gallons of water in the pool? Write your answer as a positive or negative number.

6. Express your answer to #5 in quarts.

Multiply.

1. (+5) x (–6) =

2. (–6) x (–7) =

3. (–9) x (–10) =

4. (–10) x (+12) =

5. (–5) x (–8) =

6. (–16) x (–11) =

7. (+4) x (–15) =

8. (–18) x (–6) =

9. (–16) x (+12) =

10. (–17) x (+3) =

11. (–18) x (–4) =

12. (–24) x (–5) =

13. (–11) x (+16) =

14. (+3) x (–24) =

15. (+8) x (–12) =

16. (–10) x (–16) =

Write your answers as negative or positive numbers.

17. The team lost three games a week. What is its record at the end of six weeks?

18. Jim managed to lose 25 cents a day for 10 days. Express his loss as –25 cents a day. What was his total loss?

19. Karen's budget was short $30 more every month. Express her shortfall as –30. How much was she short at the end of a year?

20. Peter's feet are 12 inches long. He stepped out the length and width of a room and found it was 10 feet by 12 feet. What is the area of the room?*

Note: Distance is expressed with a positive number. The area of a rectangle is found by multiplying the length times the width. The answer is always in square units.

Multiply.

1. (+36) x (–4) =

2. (–4) x (–19) =

3. (–6) x (–8) =

4. (–24) x (–6) =

5. (–25) x (–3) =

6. (–10) x (+19) =

7. (–8) x (+6) =

8. (–42) x (+16) =

9. (–50) x (–19) =

10. (+25) x (–6) =

11. (+23) x (–13) =

12. (–46) x (–8) =

13. (–16) x (–24) =

14. (–8) x (–16) =

15. (–42) x (–15) =

16. (–17) x (+48) =

Write your answers as negative or positive numbers.

17. I owed Sara three dollars. Express my debt as –3. Because I forgot, she wants me to pay back two times as much. What is my debt?

18. The jar of face cream said it would take 10 years off the user's age with each application. If Ashley has used it five times, what is the effect on her age?

19. Tom's mortgage is $682 a month. If he fails to pay for four months, what is the effect on his budget?

20. A pitcher gave up three runs in each inning (–3). What is the effect after nine innings?

Multiply.

1. (+8) x (–5) =

2. (–6) x (+10) =

3. (–3) x (–4) =

4. (–20) x (+12) =

5. (+17) x (+3) =

6. (–8) x (–9) =

7. (–90) x (+4) =

8. (+24) x (–8) =

9. (+42) x (–6) =

10. (–10) x (–10) =

11. (+7) x (–6) =

12. (–18) x (–4) =

13. (–36) x (+4) =

14. (+13) x (–4) =

15. (–17) x (–3) =

16. (+19) x (–51) =

Write your answers as negative or positive numbers.

17. Chris borrowed $2 from me each day for five days. Express his debt for one day as a negative number, then multiply to find his total debt.

18. Mr. Brown loses 32 hairs every day. What is the result in 21 days?

19. The team lost four games a week. What is its record of losses at the end of 10 weeks?

20. Anna's garden is a rectangle that measures 7' by 14'. What is the area of her garden?

Multiply.

1. (+17) x (–6) =

2. (+22) x (–11) =

3. (–5) x (–9) =

4. (–10) x (+5) =

5. (+6) x (–7) =

6. (–16) x (+9) =

Change the signs as needed and solve.

7. (+5) – (+10) =

8. (–6) + (–9) =

9. (+14) + (–3) =

Find the fraction of the number.

10. $\frac{1}{2}$ of 20 =

11. $\frac{2}{3}$ of 15 =

12. $\frac{4}{9}$ of 27 =

Add or subtract. Leave answers in the form in which they occur.

13. $\frac{1}{10} + \frac{7}{10} =$

14. $\frac{5}{7} - \frac{1}{7} =$

15. $\frac{4}{8} + \frac{1}{8} =$

16. $\frac{7}{12} - \frac{3}{12} =$

QUICK REVIEW

When the numerator and denominator of a fraction are multiplied by the same number, the resulting fraction is "equivalent." It has the same value as the original fraction, but is expressed in a different form.

EXAMPLE 1 $\frac{1}{2} \times \frac{2}{2} = \frac{2}{4}$ $\frac{1}{2} \times \frac{3}{3} = \frac{3}{6}$ $\frac{1}{2} \times \frac{4}{4} = \frac{4}{8}$

EXAMPLE 2 $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10} = \frac{6}{12}$

You could continue to find as many equivalent fractions for 1/2 as you wish. Fill in the missing numbers to make equivalent fractions.

17. $\frac{1}{3} = \frac{\quad}{6} = \frac{\quad}{9} = \frac{4}{\quad}$

18. $\frac{2}{5} = \frac{4}{\quad} = \frac{6}{15} = \frac{\quad}{20}$

Write your answers as positive or negative numbers.

19. The fuel tank leaks at a rate of two gallons a week. What is the effect on the contents after 13 weeks?

20. Matthew walked nine miles from the starting point. Then he turned around and walked two miles back. How far is he from his starting point?

Multiply.

1. (+16) x (–10) =

2. (+17) x (–10) =

3. (+23) x (+11) =

4. (–8) x (–4) =

5. (–7) x (–8) =

6. (+10) x (–11) =

Change the signs as needed and solve.

7. (+8) – (+19) =

8. (+17) + (–5) =

9. (–63) – (–50) =

Find the fraction of the number.

10. $\frac{1}{3}$ of 18 =

11. $\frac{3}{7}$ of 49 =

12. $\frac{2}{11}$ of 44 =

Add or subtract. Leave answers in the form in which they occur.

13. $\frac{4}{5} - \frac{2}{5} =$

14. $\frac{5}{6} + \frac{1}{6} =$

15. $\frac{4}{13} + \frac{5}{13} =$

Fill in the missing numbers to make equivalent fractions.

16. $\frac{1}{4} = \frac{\quad}{8} = \frac{3}{\quad} = \frac{\quad}{16}$

17. $\frac{5}{8} = \frac{\quad}{\quad} = \frac{15}{24} = \frac{\quad}{\quad}$

18. By working very hard, George painted 1/8 of the house on Monday and 2/8 on Tuesday. What part of the house has been painted?

Write your answers as positive or negative numbers.

19. Bill ordered a book that cost $25. By mistake he sent the company $30. They sent back an invoice that showed his account balance as a negative number. What was the number?

20. A stunt pilot flew around the perimeter of our town. If the town is a square that measures five miles on each side, what is the area of the town? (A square is a special kind of rectangle.)

Multiply.

1. (+14) x (–5) =

2. (–18) x (+11) =

3. (–9) x (–12) =

4. (+14) x (–6) =

5. (–19) x (–23) =

6. (–19) x (+17) =

Change the signs as needed and solve.

7. (+32) + (–18) =

8. (–94) + (–7) =

9. (+58) – (+100) =

Find the fraction of the number.

10. $\frac{1}{5}$ of 20 =

11. $\frac{2}{3}$ of 21 =

12. $\frac{3}{10}$ of 50 =

Add or subtract. Leave answers in the form in which they occur.

13. $\frac{2}{3} - \frac{1}{3} =$

14. $\frac{4}{7} - \frac{2}{7} =$

15. $\frac{1}{9} + \frac{5}{9} =$

Fill in the missing numbers to make equivalent fractions.

16. $\frac{1}{6} = \frac{\quad}{\quad} = \frac{\quad}{18} = \frac{4}{\quad}$

17. $\frac{3}{7} = \frac{\quad}{\quad} = \frac{\quad}{\quad} = \frac{12}{28}$

18. Five-twelfths of the pizza was left over. Austin then ate three-twelfths of a whole pizza. How much pizza was left when Austin was finished?

Write your answers as positive or negative numbers.

19. Kelly's uncle sent her $15 a month. What was the effect on her income in four months?

20. Thinking her uncle was going to send her $20 a month, Kelly promised that amount to her sister. What is the combined effect of #19 and #20 on Kelly's budget during that four months?

Apply the math skills you already have to solve these problems.

1. If a square has a perimeter of 68, what is its area?

2. A rectangle has a length of eight and a width of six. What is the area of the rectangle? If the length and width of the rectangle are both doubled, what is the new area?

   How many times the original area is the new area?

3. Find half of the original length and width of the rectangle in #2, then find the new area. What part of the original area is the new area?

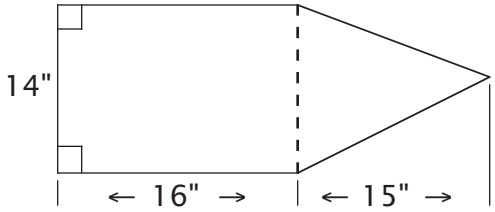
4. If the length and width of a rectangle are both tripled, what will be the effect on the area of the rectangle? Sketch and label two rectangles to illustrate your answer.

5. What is 38.98 rounded to the nearest tenth?

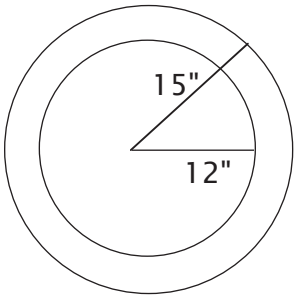
6. Several people are standing in line. Starting at one end, Tony is the third person. Starting at the other end, he is the eleventh person. How many people are in line?

If you know how to find the area of simple geometric shapes, you can combine these skills to find the area of more complex shapes. If you need to review area formulas, check the "Symbols and Tables" pages at the back of this book.

7. What is the area of the figure shown? Dotted lines have been drawn to show how it is made up of two different geometric shapes.



8. The figure below represents a circular piece of metal whose center has been cut out to leave a ring. What is the area of the remaining ring? The straight lines represent the radii of the two circles.



Fill in the blank with "have" or "owe."

1. + 19 = _____19

2. –35 = _____35

3. –58 = _____ 58

Add.

4. (+8) + (–7) =

5. (–10) + (–2) =

6. (–7) + (–15) =

7. (+9) + (–11) =

8. (+32) + (+96) =

9. (+4) + (–13) =

10. (–5) + (–18) =

11. (–436) + (–251) =

12. (–511) + (+709) =

Find the fraction of the number.

13. $\frac{1}{5}$ of 10 =

14. $\frac{2}{3}$ of 9 =

15. $\frac{7}{8}$ of 32 =

16. $\frac{1}{2}$ of 30 =

17. Austin took 25 paces forward. Then he took 17 paces backward. How many paces from his starting point was he?

18. Greg owes $5 to one friend and $6 to another. Express his debt as a negative number.

19. Four-fifths of the people at the party won prizes. If there were 20 people at the party, how many won prizes?

20. The book Devan is reading has 254 pages. If Devan is one-half of the way through the book, how many pages has he read?

Change to an addition problem, then solve.

1. (+52) – (–23) =

2. (–35) – (–16) =

3. (+54) – (+15) =

4. (–7) – (+ 24) =

5. (–36) – (+ 49) =

6. (+22) – (–30) =

Change the signs as needed and solve.

7. (+30) + (–24) =

8. (–53) – (+10) =

9. (+13) + (–2) =

10. (–33) – (+2) =

11. (–7) + (+1) =

12. (–4) – (+18) =

Add or subtract.

13. $\frac{1}{5} + \frac{3}{5}$

14. $\frac{2}{8} - \frac{1}{8} =$

15. $\frac{5}{7} - \frac{2}{7} =$

16. $\frac{1}{3} + \frac{1}{3} =$

17. Two-fourths of the cake was eaten on Monday and one-fourth was eaten on Tuesday. What part of the cake has been eaten?

18. Nick has 15 dimes. If he gives Sean one-third of the dimes, how many will Nick have left?

Write your answers as positive or negative numbers.

19. Buddy received $21 and spent $25. What was the total effect on his budget?

20. Jake found 46 coins on the beach with his metal detector but lost 15 out of his pocket later that day. How many coins did Jake have left?

Multiply.

1. $(-20) \times (-4) =$
2. $(+19) \times (-3) =$
3. $(-30) \times (-17) =$
4. $(-27) \times (+8) =$
5. $(-9) \times (+2) =$
6. $(-7) \times (-29) =$

Change the signs as needed and solve.

7. $(+33) - (-46) =$
8. $(-27) + (-10) =$
9. $(-41) - (-20) =$

Find the fraction of the number.

10. $\frac{1}{3}$ of $24 =$
11. $\frac{2}{5}$ of $15 =$
12. $\frac{3}{7}$ of $28 =$

Add or subtract. Leave answers in the form in which they occur.

13. $\frac{5}{8} - \frac{3}{8} =$
14. $\frac{7}{10} - \frac{1}{10} =$
15. $\frac{1}{4} + \frac{1}{4} =$

Fill in the missing numbers to make equivalent fractions.

16. $\frac{1}{5} = \frac{\quad}{\quad} = \frac{\quad}{15} = \frac{4}{\quad}$

17. $\frac{2}{3} = \frac{\quad}{\quad} = \frac{\quad}{\quad} = \frac{8}{12}$

18. Emily did one-fifth of the chores and Madison did three-fifths of them. What part of the chores has been done?

Write your answers as positive or negative numbers.

19. Elizabeth spent $4 a day on lunch for five days. Write the daily cost of the lunch as a negative number and multiply to find the total change in the amount of money she has.

20. During the drought, the water level in the lake fell two feet (–2) every week. What was the effect on the water level in six weeks?