



Number Systems and Algebra Concepts

In *Fourth* and *Fifth Grade Everyday Mathematics*, your child worked with addition and subtraction of positive and negative numbers. In this unit, students use multiplication patterns to help them establish the rules for multiplying and dividing with positive and negative numbers. They also develop and use an algorithm for the division of fractions.

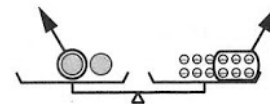
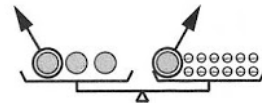
In the rest of the unit, your child will explore beginning algebra concepts. First, the class reviews how to determine whether a number sentence is true or false. This involves understanding what to do with numbers that are grouped within parentheses and knowing in what order to calculate if the groupings of numbers are not made explicit by parentheses.

Students then solve simple equations by trial and error to reinforce what it means to solve an equation—to replace a variable with a number that will make the number sentence true.

Next, they solve pan-balance problems, first introduced in *Fifth Grade Everyday Mathematics*, to develop a more systematic approach to solving equations. For example, to find out how many marbles weigh as much as 1 orange in the top balance at the right, you can first remove 1 orange from each pan and then remove half the remaining oranges from the left side and half the marbles from the right side. The pans will still balance.

Students learn that each step in the solution of a pan-balance problem can be represented by an equation, thus leading to the solution of the original equation. You might ask your child to demonstrate how pan-balance problems work.

Finally, your child will learn how to solve inequalities—number sentences comparing two quantities that are not equal.



Please keep this Family Letter for reference as your child works through Unit 6.

Vocabulary

Important terms in Unit 6:

cover-up method An informal method for finding the solution of an open sentence by covering up a part of the sentence containing a variable.

Division of Fractions Property A property of dividing that says division by a fraction is the same as multiplication by the *reciprocal* of the fraction. Another name for this property is the “invert and multiply rule.” For example:

$$\begin{aligned} 5 \div 8 &= 5 * \frac{1}{8} = \frac{5}{8} \\ 15 \div \frac{3}{5} &= 15 * \frac{5}{3} = \frac{75}{3} = 25 \\ \frac{1}{2} \div \frac{3}{5} &= \frac{1}{2} * \frac{5}{3} = \frac{5}{6} \end{aligned}$$

In symbols: For a and nonzero b , c , and d ,

$$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} * \frac{d}{c}$$

If $b = 1$, then $\frac{a}{b} = a$ and the property is applied as in the first two examples above.

equivalent equations Equations with the same solution. For example, $2 + x = 4$ and $6 + x = 8$ are equivalent equations with solution 2.

inequality A number sentence with a *relation symbol* other than $=$, such as $>$, $<$, \geq , \leq , \neq , or \approx .

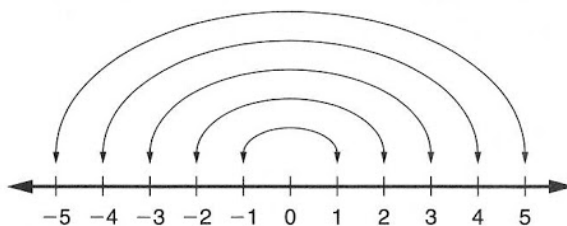
integer A number in the set $\{\dots, -4, -3, -2, -1, 0, 1, 2, 3, 4, \dots\}$. A whole number or its *opposite*, where 0 is its own opposite.

Multiplication Property of -1 A property of multiplication that says multiplying any number by -1 gives the opposite of the number. For example, $-1 * 5 = -5$ and $-1 * -3 = -(-3) = 3$. Some calculators apply this property with a $[+/-]$ key that toggles between a positive and negative value in the display.

open sentence A number sentence with one or more variables. An open sentence is neither true nor false. For example, $9 + \underline{\quad} = 15$, $? - 24 < 10$, and $7 = x + y$ are open sentences.

opposite of a number n A number that is the same distance from zero on the number line as n ,

but on the opposite side of zero. In symbols, the opposite of a number n is $-n$, and, in *Everyday Mathematics*, $OPP(n)$. If n is a negative number, $-n$ is a positive number. For example, the opposite of $-5 = 5$. The sum of a number n and its opposite is



zero; $n + -n = 0$.

order of operations Rules that tell the order in which operations in an expression should be carried out. The conventional order of operations is:

1. Do the operations inside grouping symbols. Work from the innermost set of grouping symbols outward. Inside grouping symbols, follow Rules 2–4.
2. Calculate all the expressions with exponents.
3. Multiply and divide in order from left to right.
4. Add and subtract in order from left to right.

$$\begin{aligned} \text{For example: } 5^2 + (3 * 4 - 2) / 5 &= 5^2 + (12 - 2) / 5 \\ &= 5^2 + 10 / 5 \\ &= 25 + 10 / 5 \\ &= 25 + 2 \\ &= 27 \end{aligned}$$

reciprocals Two numbers whose product is 1. For example, 5 and $\frac{1}{5}$, $\frac{3}{5}$ and $\frac{5}{3}$, and 0.2 and 5 are all pairs of multiplicative inverses.

trial-and-error method A method for finding the solution of an equation by trying a sequence of test numbers.

Do-Anytime Activities

To work with your child on concepts taught in this unit, try these interesting and engaging activities:

1. If your child helps with dinner, ask him or her to identify uses of positive and negative numbers in the kitchen. For example, negative numbers might be used to describe the temperature in the freezer. Positive numbers are used to measure liquid and dry ingredients. For a quick game, you might imagine a vertical number line with the countertop as 0; everything above is referenced by a positive number, and everything below is referenced by a negative number. Give your child directions for getting out items by using phrases such as this: “the -2 mixing bowl”; that is, the bowl on the second shelf below the counter.
2. If your child needs extra practice adding and subtracting positive and negative numbers, ask him or her to bring home the directions for the *Credits/Debits Game*. Play a few rounds for review.
3. After your child has completed Lesson 6, ask him or her to explain to you what the following memory device means: *Please Excuse My Dear Aunt Sally*. It represents the rule for the order of operations: parentheses, exponents, multiplication, division, addition, subtraction. Your family might enjoy inventing another memory device that uses the same initial letters; for example, *Please Excuse My Devious Annoying Sibling*; *Perhaps Everything Might Drop Again Soon*, and so on.

Building Skills Through Games

In Unit 6, your child will work on his or her understanding of algebra concepts by playing games like the ones described below.

Algebra Election See *Student Reference Book*, pages 304 and 305.

Two teams of two players will need 32 *Algebra Election* cards, an Electoral Vote map, 1 six-sided die, 4 pennies or other small counters, and a calculator. This game provides practice with solving equations.

Credits/Debits Game (Advanced Version) See *Student Reference Book*, page 308.

Two players use a complete deck of number cards and a recording sheet to play the advanced version of the *Credits/Debits Game*. This game provides practice with adding and subtracting positive and negative integers.

Top-It See *Student Reference Book*, pages 337 and 338.

Top-It with Positive and Negative Numbers provides practice finding sums and differences of positive and negative numbers. One or more players need 4 each of number cards 0–9 and a calculator to play this *Top-It* game.

As You Help Your Child with Homework

As your child brings assignments home, you might want to go over the instructions together, clarifying them as necessary. The answers listed below will guide you through some of the Unit 6 Study Links.

Study Link 6•1

2. ✓ 3. ✓ 5. ✓ 7. $\frac{1}{19}$
 9. $\frac{7}{26}$ 11. $\frac{3}{4}$ 13. $12\frac{1}{2}$ lb 14. $38\frac{1}{4}$ in.
 15. $67\frac{1}{2}$ in.³ 16. 81 17. -2 18. -67

Study Link 6•2

1. $\frac{4}{5}$ 3. 1 5. 1 7. $\frac{5}{98}$
 9. 10 10. 14 11. 17 12. 13.56
 13. 589.36 14. 13

Study Link 6•3

1. a. $46 + (-19) = 27$ c. $-5 + 6.8 = 1.8$
 2. a. -29 c. $-2\frac{1}{5}$ e. $-3\frac{1}{4}$ g. -18.2
 3. a. (-2) c. $2\frac{1}{4}$ e. -3.7 g. $-\frac{7}{16}$
 4. 2 5. 11 6. 8 7. -6

Study Link 6•4

1. -60 3. -6 5. -5 7. -6
 9. -1,150 11. -54 13. -2 15. $-\frac{5}{9}$
 17. -2 19. a. 36 b. 77

Study Link 6•4a

7. 5.75 8. 0 9. 6.5 10. $\frac{84}{9}$
 11. 2.75 12. $8\frac{1}{2}$ 17. 4 18. 14
 19. 5

Study Link 6•6

1. 21 3. $\frac{21}{32}$ 5. 72 7. 1
 9. 28 11. 3 12. 23 13. 6, 1
 14. 2, 1 15. 4, 4

Study Link 6•7

1. a. $17 < 27$; $3 * 15 < 100$; $(5 - 4) * 20 = 20$;
 $12 \neq 12$

2. a. true b. false c. false d. true

3. a. $(28 - 6) + 9 = 31$ b. $20 < (40 - 9) + 11$

- c. $(36/6) / 2 < 12$ d. $4 * (8 - 4) = 16$

4. a. $60 - 14 = 50$; false b. $90 = 3 * 30$; true

- c. $21 + 7 < 40$; true d. $\sqrt{36} > \frac{1}{2} * 10$; true

5. 0.92 6. 3.51 7. 251.515

Study Link 6•8

1. a. $b = 19$ b. $n = 24$ c. $y = 3$ d. $m = \frac{1}{5}$

2. a. $\frac{x}{6} = 10$; $x = 60$ b. $200 - 7 = n$; $n = 193$

- c. $b * 48 = 2,928$; $b = 61$

3. a. Sample answer: $(3 * 11) + (12 - 9)$

4. 54 5. 3.6 6. 121

Study Link 6•9

1. 1 2. $1\frac{1}{2}$ 3. 5 4. 1

7. 10 8. $\frac{1}{4}$ 9. $\frac{2}{3}$ 10. $\frac{1}{2}$

Study Link 6•10

1. $k - 4 = 5$; $3k - 12 = 15$; $20k - 12 = 15 + 17k$

2. Multiply by 2; M 2

3. Add $5m$; A $5m$

- Subtract $3q$; S $3q$

- Divide by 2; D 2

- Add 5; A 5

- Subtract 6; S 6

Study Link 6•11

1. $k = 12$ 3. $x = 1$ 5. $r = 2$

Study Link 6•12

1. a. $15 \neq 3 * 7$ b. $x + 5 = 75$

- c. $\frac{9}{9} + 13 \leq 14$

2. a. $200 \div (4 * 5) = 10$

- b. $16 + 2^2 - (5 + 3) = 12$

3. a. 46

- b. 18

- c. 0

- d. 8

4. a. $x = -1$

- b. $y = 6.5$

6. \$0.25; \$0.21

7. 1; 1.28

8. 800; 781

HOMEWORK PACK DUE: Sunday, February 19

Unit 6 Assessment A Outline: Wednesday, February 15

- Division of rational numbers (SMJ p209)
- Calculations using rational numbers (SMJ p222-224)
- Story Sums (SMJ p226-227)

Unit 6 Assessment B Outline: Sunday, February 19

- Pan-Balance calculations (SMJ p235)
- Solving Algebraic Equations (SMJ p228)
- Inequalities (SMJ p244)
- Graphing Inequalities (SMJ p245 q3)
- Calculating Angles of a Triangle (SMJ p191 q1)

HOMEWORK PACK DUE: Sunday, February 19

STUDY LINK
6·1**Practice with Fractions**

Put a check mark next to each pair of equivalent fractions.

1. _____ $\frac{2}{3}$ and $\frac{5}{6}$

2. _____ $1\frac{3}{4}$ and $\frac{28}{16}$

3. _____ $\frac{24}{30}$ and $\frac{4}{5}$

4. _____ $\frac{7}{3}$ and $\frac{3}{7}$

5. _____ $\frac{56}{8}$ and $\frac{49}{7}$

6. _____ $2\frac{3}{8}$ and $\frac{19}{4}$



Find the reciprocal of each number. Multiply to check your answers.

7. 19 _____

8. $\frac{2}{5}$ _____

9. $3\frac{5}{7}$ _____

10. $\frac{1}{6}$ _____

Multiply. Write your answers in simplest form. Show your work.

11. $\frac{2}{3} * 1\frac{1}{8} =$ _____

12. $3\frac{1}{7} * \frac{7}{22} =$ _____

Solve the number stories.

13. How much does a box containing 5 horseshoes weigh if each horseshoe weighs about $2\frac{1}{2}$ pounds? _____

14. One and one-half dozen golf tees are laid in a straight line, end to end. If each tee is $2\frac{1}{8}$ inches long, how long is the line of tees? _____

15. A standard-size brick is 8 inches long and $2\frac{1}{4}$ inches high and has a depth of $3\frac{3}{4}$ inches. What is the volume of a standard-size brick? _____

Practice

16. $107 + (-82) + 56 =$ _____

17. $4 + (12 + -18) =$ _____

18. $-85 + 66 + (-48) =$ _____

19. $7 + (-11 + -22) =$ _____

STUDY LINK
6•2**Fraction Division****Division of Fractions Algorithm**

$$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} * \frac{d}{c}$$



Divide. Show your work.

1. $\frac{2}{3} \div \frac{5}{6} =$ _____

2. $1\frac{3}{4} \div \frac{28}{16} =$ _____

3. $\frac{24}{30} \div \frac{4}{5} =$ _____

4. $\frac{7}{3} \div \frac{3}{7} =$ _____

5. $\frac{5}{8} \div \frac{5}{8} =$ _____

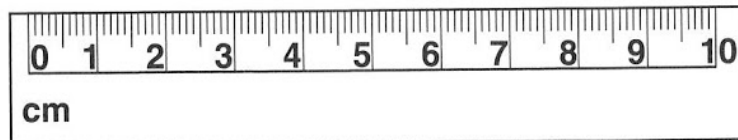
6. $2 \div \frac{1}{4} =$ _____

7. $\frac{1}{7} \div 2\frac{4}{5} =$ _____

8. $5\frac{5}{6} \div 6 =$ _____

Try This

9. How many $\frac{3}{10}$ -centimeter segments are in 3 centimeters? _____ segments
10. How many $\frac{3}{10}$ -centimeter segments are in $4\frac{1}{5}$ centimeters? _____ segments
11. How many $\frac{4}{10}$ -centimeter segments are in $6\frac{4}{5}$ centimeters? _____ segments

**Practice**

Round each number to the underlined place.

12. 13.561 _____ 13. 589.3552 _____ 14. 12.9694 _____

STUDY LINK
6•3

Subtraction of Signed Numbers



For any numbers a and b , $a - b = a + \text{OPP}(b)$, or $a - b = a + (-b)$.

1. Rewrite each subtraction problem as an addition problem. Then solve the problem.

a. $46 - 19 =$ _____

b. $-43 - 17 =$ _____

c. $-5 - (-6.8) =$ _____

d. $21 - (-21) =$ _____

2. Subtract.

a. $-72 - (-43) =$ _____

b. _____ $= 4 - (-39)$

c. $-\left(\frac{7}{10}\right) - 1\frac{1}{2} =$ _____

d. $4.8 - (-3.6) =$ _____

e. _____ $= -2\frac{1}{2} - \frac{3}{4}$

f. $-\left(\frac{5}{6}\right) - \left(-\frac{1}{3}\right) =$ _____

g. $-12.3 - 5.9 =$ _____

h. $-8.5 - (-2.7) =$ _____

3. Fill in the missing numbers.

a. $19 = 17 -$ _____

b. $-43 = -26 -$ _____

c. $\frac{1}{2} -$ _____ $= -1\frac{3}{4}$

d. _____ $- \left(-2\frac{4}{5}\right) = 3\frac{7}{10}$

e. $-17.6 =$ _____ $- 13.9$

f. $83.5 = -62.7 -$ _____

g. _____ $= 5\frac{3}{4} - 6\frac{3}{16}$

h. $9.6 -$ _____ $= 10$

Practice

4. $100 = 10^x$; $x =$ _____

5. $10^x = 100$ billion; $x =$ _____

6. 100 million $= 10^x$; $x =$ _____

7. $10^x = 0.00001$; $x =$ _____

STUDY LINK
6·4***, / of Signed Numbers****A Multiplication Property**

- ◆ The product of two numbers with the same sign is positive.
- ◆ The product of two numbers with different signs is negative.

A Division Property

- ◆ The quotient of two numbers with the same sign is positive.
- ◆ The quotient of two numbers with different signs is negative.

Solve.

1. $-12 * 5 = \underline{\hspace{2cm}}$

2. $-63/7 = \underline{\hspace{2cm}}$

3. $24 \div (-4) = \underline{\hspace{2cm}}$

4. $-9 * \underline{\hspace{2cm}} = 54$

5. $-50 / \underline{\hspace{2cm}} = 10$

6. $-6 * 5 * 8 = \underline{\hspace{2cm}}$

7. $48 / (-6 - 2) = \underline{\hspace{2cm}}$

8. $(-8 * 5) + 12 = \underline{\hspace{2cm}}$

9. $50 * (-23) = \underline{\hspace{2cm}}$

10. $6 * (12 + 15) = \underline{\hspace{2cm}}$

11. $(-90 \div 10) + (-45) = \underline{\hspace{2cm}}$

12. $56 / (-7) / (-4) = \underline{\hspace{2cm}}$

13. $\underline{\hspace{2cm}} * (-7) * (-4) = -56$

14. $\underline{\hspace{2cm}} \div 40 = -9$

Try This

15. $\frac{2}{3} * \left(-\frac{5}{6}\right) = \underline{\hspace{2cm}}$

16. $(8 * (-3)) - (8 * (-9)) = \underline{\hspace{2cm}}$

17. $0.25 * (-8) = \underline{\hspace{2cm}}$

18. $\left(-\frac{3}{4}\right) \div \left(-\frac{1}{2}\right) = \underline{\hspace{2cm}}$

19. Evaluate each expression for $b = -7$.

a. $(-9 * b) - 27 = \underline{\hspace{2cm}}$

b. $11 * (-b) = \underline{\hspace{2cm}}$

c. $-b / (-14) = \underline{\hspace{2cm}}$

d. $b - (b + 16) = \underline{\hspace{2cm}}$

Name _____

Date _____

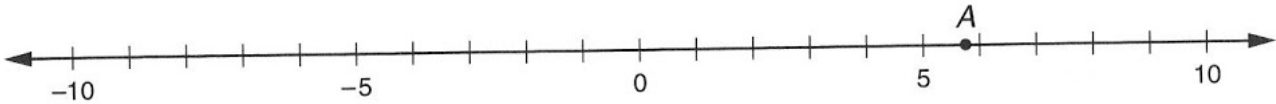
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STUDY LINK
6·4a

Absolute Value



Plot and label the following points on the number line. The first one has been done for you.



1. Point A: 5.75

2. Point B: $\frac{0}{10}$

3. Point C: -6.5

4. Point D: $\frac{84}{9}$

5. Point E: -2.75

6. Point F: $-8\frac{1}{2}$

Find the absolute value of each of the numbers you plotted.

7. $|5.75| = \underline{\hspace{2cm}}$

8. $|\frac{0}{10}| = \underline{\hspace{2cm}}$

9. $|-6.5| = \underline{\hspace{2cm}}$

10. $|\frac{84}{9}| = \underline{\hspace{2cm}}$

11. $|-2.75| = \underline{\hspace{2cm}}$

12. $|-8\frac{1}{2}| = \underline{\hspace{2cm}}$

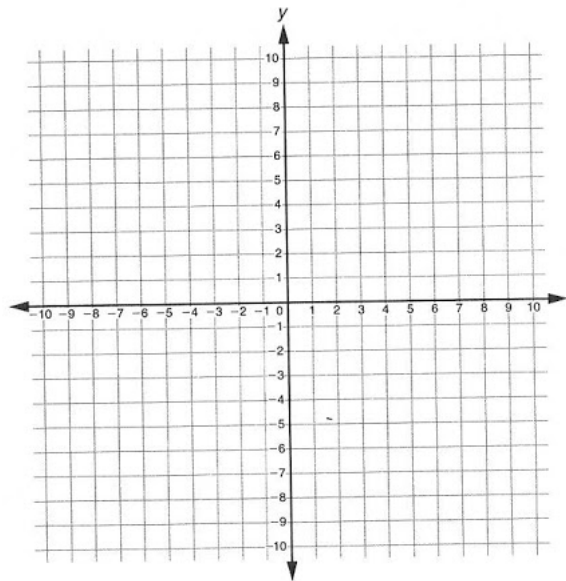
Plot the following points on the coordinate grid.

13. Point A: (-3,-6)

14. Point B: (1,-6)

15. Point C: (-3,8)

16. Point D: (-8,8)



Use absolute value to find the distance between the given points. Show how you solved each problem.

17. A and B _____

18. A and C _____

19. C and D _____

Name _____

Date _____

Time _____

STUDY LINK
6·5**Turn-Around Patterns**

Fill in the missing numbers in the tables. Look for patterns in the results.

1.

x	y	OPP(x)	OPP(y)	$x + y$	$y + x$	$x - y$	$y - x$
7	9	-7	-9	16			
-2	12						
-3	-9						
$\frac{2}{3}$	$\frac{5}{6}$						
2.7	-1.9						
2^2	2^3						

Which patterns did you find in your completed table?

2.

x	y	$\frac{1}{x}$	$\frac{1}{y}$	$x * y$	$y * x$	$x \div y$	$y \div x$
7	9	$\frac{1}{7}$	$\frac{1}{9}$	63			
-2	12						
-3	-9						
$\frac{2}{3}$	$\frac{5}{6}$						
2.7	-1.9						
2^2	2^3						

Which patterns did you find in your completed table?

STUDY LINK
6.6**Using Order of Operations**

Please Excuse My Dear Aunt Sally
Parentheses Exponents Multiplication Division Addition Subtraction



Evaluate each expression.

1. $5 + 6 * 3 - 2 =$ _____

2. $4 * 9 / 2 + (-4 + 6) =$ _____

3. $\frac{1}{2} + \frac{5}{8} * \frac{1}{2} \div 2 =$ _____

4. $(2.3 + 7.8) * 4 + 3 =$ _____

5. $4^2 + 7(3 - (-5)) =$ _____

6. $((2 * 4) + 3) * 6 / 2 =$ _____

Evaluate the following expressions for $m = -3$.

7. $-\frac{m}{m} + 6 - 4 =$ _____

8. $((4 + 11) * -3) / 9 * (-m) =$ _____

9. $m^2 + (-m^3) - 8 =$ _____

10. $\frac{1}{2} * m \div \frac{5}{4} + \frac{3}{5} - \frac{1}{10} =$ _____

Practice

Find each missing number.

11. 3 gal 7 qt = 4 gal _____ qt

12. 5 gal 3 qt = _____ qt

13. 13 pt = _____ qt _____ pt

14. 10 c = _____ qt _____ pt

15. 18 qt = _____ gal _____ pt

Units of Capacity

2 cups (c) = 1 pint (pt)

2 pints = 1 quart (qt)

4 quarts = 1 gallon (gal)

Name _____

Date _____

Time _____

STUDY LINK
6•7

Number Sentences



1. a. Draw a circle around each number sentence.

$17 < 27$

$3 * 15 < 100$

$56 / 8$

$(5 - 4) * 20 = 20$

$(4 + 23) / 9$

$12 \neq 12$

b. Choose one item that you did not circle. Explain why it is not a number sentence.

2. Tell whether each number sentence is true or false.

a. $9 - (6 + 2) > 0.5$ _____

b. $94 = 49 - 2 * 2$ _____

c. $\frac{24}{6} < 33 / 11$ _____

d. $70 - 25 = 45$ _____

3. Insert parentheses to make each number sentence true.

a. $28 - 6 + 9 = 31$

b. $20 < 40 - 9 + 11$

c. $36 / 6 / 2 < 12$

d. $4 * 8 - 4 = 16$

4. Write a number sentence for each word sentence. Tell whether the number sentence is true or false.

Word sentence	Number sentence	True or false?
a. If 14 is subtracted from 60, the result is 50.	_____	_____
b. 90 is 3 times as much as 30.	_____	_____
c. 21 increased by 7 is less than 40.	_____	_____
d. The square root of 36 is greater than half of 10.	_____	_____

Practice

5. $1.867 - 0.947 =$ _____ 6. $6 - 2.49 =$ _____ 7. $256.3 - 4.785 =$ _____

HOMEWORK PACK DUE: Sunday, February 19

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STUDY LINK
6•8

Solving Simple Equations



1. Find the solution to each equation.

a. $b - 7 = 12$ _____

b. $53 = n + 29$ _____

c. $45 / y^2 = 5$ _____

d. $m * \frac{2}{3} = 1 - \frac{13}{15}$ _____

2. Translate the word sentences below into equations. Then solve each equation.

Word sentence	Equation	Solution
a. If you divide a number by 6, the result is 10.	_____	_____
b. Which number is 7 less than 200?	_____	_____
c. A number multiplied by 48 is equal to 2,928.	_____	_____
d. 27 is equal to 13 increased by which number?	_____	_____

3. For each problem, use parentheses and as many numbers and operations as you can to write an expression equal to the target number. You may use each number only once in an expression. Write expressions with more than two numbers.

- a. Numbers: 3, 9, 11, 12, 19 Target number: 36 _____
- b. Numbers: 1, 2, 6, 14, 18 Target number: 50 _____
- c. Numbers: 4, 5, 8, 14, 17 Target number: 22 _____
- d. Numbers: 6, 7, 12, 14, 20 Target number: 41 _____

Practice

Complete.

4. $540 \div 90 = \underline{\quad} \div 9$ 5. $36 \div 6 = \underline{\quad} \div 0.6$ 6. $\underline{\quad} \div 11 = 1.21 \div 0.11$

Name _____

Date _____

Time _____

STUDY LINK
6·9

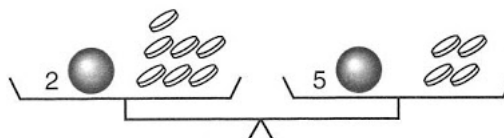
Solving Pan-Balance Problems



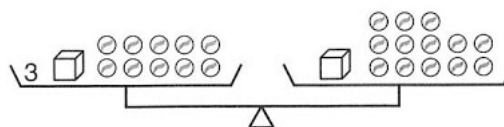
Solve these pan-balance problems. In each figure, the two pans are balanced.



1. One ball weighs
as much as _____ coin(s).



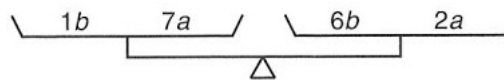
2. One cube weighs
as much as _____ marble(s).



3. One x weighs
as much as _____ y (s).



4. One a weighs
as much as _____ b (s).



Make up two pan-balance problems for a classmate to solve.

5.



6.



Practice

7. $605 * \frac{1}{10} = 605 \div \underline{\hspace{2cm}}$

8. $72 * \underline{\hspace{2cm}} = 72 \div 4$

9. $\underline{\hspace{2cm}} * 30 = (2 * 30) \div 3$

10. $\underline{\hspace{2cm}} * (x + 5) = \frac{x+5}{2}$

STUDY LINK
6•10

Balancing Equations



For Problem 1, record the result of each operation on each pan.

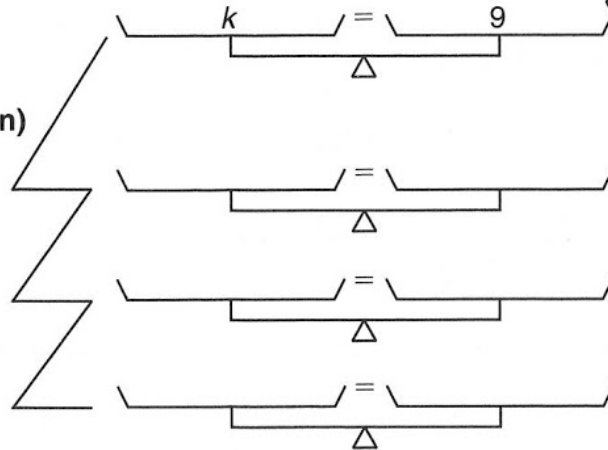
1. Original pan-balance equation

Operation
(in words) (abbreviation)

Subtract 4. S 4

Multiply by 3. M 3

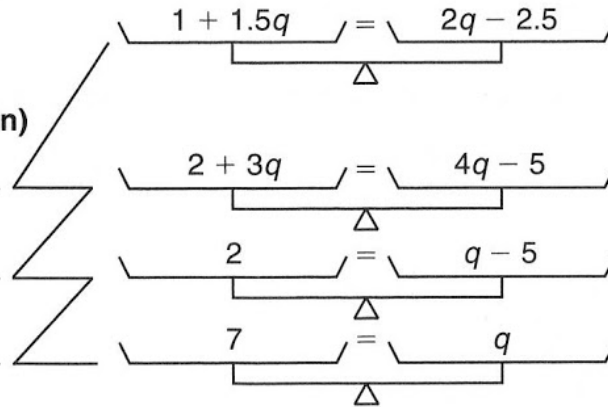
Add 17k. A 17k



For Problems 2 and 3, record the operation that was used to obtain the result on each pan balance.

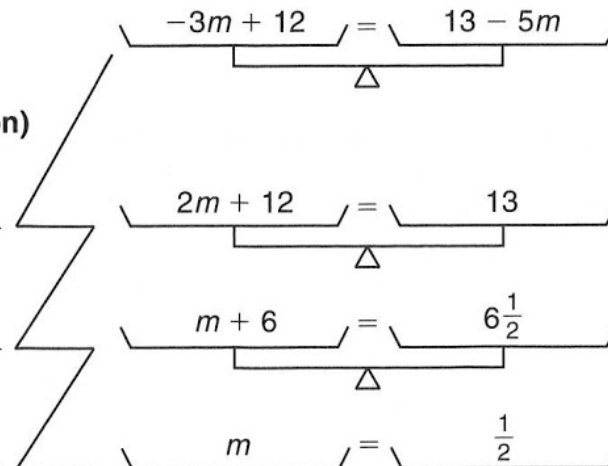
2. Original pan-balance equation

Operation
(in words) (abbreviation)



3. Original pan-balance equation

Operation
(in words) (abbreviation)



Name _____

Date _____

Time _____

STUDY LINK
6•11

Solving Equations



Solve each equation. Then check the solution.

1. $9 + 5k = 45 + 2k$

Original equation

$9 + 5k = 45 + 2k$

Operation

$S \ 9 \quad 5k = 36 + 2k$

$k = 12$

Check

2. $\frac{9}{2}m - 8 = -5.5 + 4m$

Original equation

Operation

Check

3. $24x - 10 = 18x - 4$

Original equation

Operation

Check

4. $12d - 9 = 15d + 9$

Original equation

Operation

Check

5. $-6r - 5 = 7 - 12r$

Original equation

Operation

Check

6. $\frac{1}{3}p + 7 = 12 - \frac{2}{3}p$

Original equation

Operation

Check

Name _____

Date _____

Time _____

STUDY LINK
6·12

Review



1. Write a number sentence for each word sentence.

Word sentence

Number sentence

- a. 15 is not equal to 3 times 7.
- b. 5 more than a number is 75.
- c. 13 more than 9 divided by 9 is less than or equal to 14.

2. Insert parentheses to make each equation true.

a. $200 \div 4 * 5 = 10$

b. $16 + 2^2 - 5 + 3 = 12$

3. Use the order of operations to evaluate each expression.

a. $5 * 6 + 8 * 2 =$ _____

b. $20 - \frac{8}{2^2} =$ _____

c. $40 + 8 - 24 * 2 =$ _____

d. $4^2 \div (4 * 2) + 3 * 2 =$ _____

4. Solve each equation.

a. $3x - 5 = 5x - 3$

b. $\frac{(4y + 5)}{2} = y + 9$

Solution _____

Solution _____

5. Name three solutions of the inequality. Then graph the solution set.

a. $f < -\frac{3}{2}$ _____



Practice

6. $\$2.52 \div 12$ Estimate _____ Quotient _____
7. $45 \overline{)57.60}$ Estimate _____ Quotient _____
8. $120 \overline{)93,720}$ Estimate _____ Quotient _____

HOMEWORK PACK DUE: Sunday, February 19