Name _____ Date _____

1-2 Study Guide

Powers and Exponents

A **power** can be used to show a number multiplied by itself.

$3 \times 3 \times 3 \times 3$ can be written 3^4. It is read, "3 to the fourth power."

The *exponent*, 4, tells you how many times the *base*, 3, is used as a factor.

base → 3^4 ← exponent

Example 1 **Write $2 \cdot 2 \cdot 3 \cdot 2 \cdot 2 \cdot 3$ using exponents.**

There are four factors of 2 and two factors of 3.

$2 \cdot 2 \cdot 3 \cdot 2 \cdot 2 \cdot 3 = 2^4 \cdot 3^2$

Multiply to find the value of expressions with exponents.

Examples **2** **Evaluate 3^4.**

$3^4 = 3 \cdot 3 \cdot 3 \cdot 3$
$= 81$

3 **Evaluate $2^4 \cdot 3^2$.**

$2^4 \cdot 3^2 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3$
$= 16 \cdot 9$
$= 144$

Write each expression using exponents.

1. $7 \cdot 7 \cdot 7 \cdot 6 \cdot 6 \cdot 6 \cdot 6$
2. $2 \cdot 2 \cdot 5 \cdot 5 \cdot 9 \cdot 9$
3. $10 \cdot 10 \cdot 8 \cdot 8$

Evaluate each expression.

4. 10^5
5. 2^5
6. 7^2
7. $3^3 \cdot 4^2$
8. $1^9 \cdot 5^3$
9. $100^2 \cdot 6^2$
10. 12^2
11. $2^4 \cdot 1^6$
12. 50^3
13. $7^2 \cdot 7^2$
14. $4^2 \cdot 3^2 \cdot 2^2$
15. $9^1 \cdot 9^2$

Name _____ Date _____

1-4 Study Guide

Solving Subtraction and Addition Equations

If you add the same number to each side of an equation, the two sides remain equal.

Example 1 **Solve $v - 65 = 21$. Check your solution.**

$v - 65 + 65 = 21 + 65$ *Add 65 to each side of the equation.*

$v = 86$

Check: $v - 65 = 21$

$86 - 65 \stackrel{?}{=} 21$ *Replace v with 86.*

$21 = 21$ ✔

If you subtract the same number from each side of an equation, the two sides remain equal.

Example 2 **Solve $c + 34 = 99$. Check your solution.**

$c + 34 - 34 = 99 - 34$ *Subtract 34 from each side of the equation.*

$c = 65$

Check: $c + 34 = 99$

$65 + 34 \stackrel{?}{=} 99$ *Replace c with 65.*

$99 = 99$ ✔

Solve each equation. Check your solution.

1. $d + 22 = 60$
2. $s - 46 = 12$
3. $91 - t = 20$
4. $1.5 + r = 3$
5. $\$3.50 - g = \$1.25$
6. $x + 140 = 300$
7. $\$5.60 + h = \$7.00$
8. $e - 405 = 325$
9. $808 = p + 500$
10. $4.09 = 2 + y$
11. $11.3 = 15 - b$
12. $r - 2.2 = 6$
13. $a + 6.25 = 8.55$
14. $400 - m = 146$
15. $\$7.95 + n = \$10.00$

Name _____ Date _____

1-5 Study Guide

Solving Division and Multiplication Equations

You can use inverse operations to solve multiplication and division equations.

If you multiply each side of an equation by the same number, the two sides remain equal.

Example 1 **Solve $y \div 6 = 7$. Check your solution.**

$y \div 6 \cdot 6 = 7 \cdot 6$ *Multiply each side of the equation by 6.*

$y = 42$

Check: $y \div 6 = 7$

$42 \div 6 \stackrel{?}{=} 7$ *Replace y with 42.*

$7 = 7$ ✔

If you divide each side of an equation by the same number (not 0), the two sides remain equal.

Example 2 **Solve $5m = 12.5$. Check your solution.**

$5m \div 5 = 12.5 \div 5$ *Divide each side of the equation by 5.*

$m = 2.5$

Check: $5m = 12.5$

$5 \cdot 2.5 \stackrel{?}{=} 12.5$ *Replace m with 2.5.*

$12.5 = 12.5$ ✔

Solve each equation. Check your solution.

1. $14k = 84$

2. $\frac{b}{6} = 12$

3. $99 = 3e$

4. $15 = \frac{d}{7}$

5. $\$5.00 = 4w$

6. $9t = 729$

7. $3 = \frac{z}{22}$

8. $0.5p = 3$

9. $2.7 = 0.9r$

10. The product of 7 and a number w is 91. Find the number.

Name _____ Date _____

1-6 Study Guide

Writing Expressions and Equations

The table shows phrases written as mathematical expressions.

Phrase	Expression	Phrase	Expression
8 more than a number the sum of 8 and a number x plus 8 x increased by 8	$x + 8$	7 subtracted from a number h minus 7 7 less than a number a number decreased by 7	$h - 7$
Phrase	**Expression**	**Phrase**	**Expression**
3 multiplied by n 3 times a number the product of n and 3	$3n$	a number divided by 5 the quotient of t divided by 5 divide a number by 5	$\frac{t}{5}$

Write each phrase as an algebraic expression.

1. 12 more than a number

2. the quotient of a number divided by 9

3. 4 times a number

4. 15 less than a number

5. 1 less than the product of 3 and m

6. the product of 4 times a number minus 8

Write each sentence as an algebraic equation.

7. A number minus 6 equals 12.

8. A number plus 14 equals 25.

9. 3 more than 5 times the number of dogs is 18 dogs.

10. 4 times the number of cows plus 2 times the number of ducks is 20.

11. 2 less than the quotient of 12 divided by a number is 2.

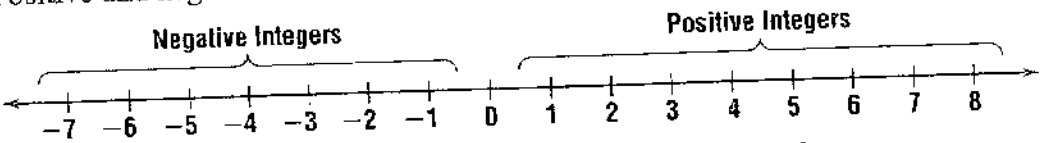
12. The product of 5 and y added to 3 is 33.

Name _____ Date _____

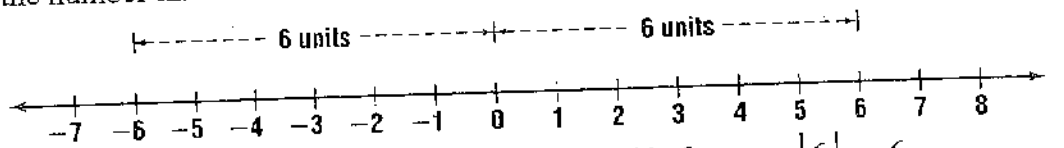
2-1 Study Guide

Integers and Absolute Value

Positive and negative whole numbers are called **integers.**



The **absolute value** of a number is the distance the number is from zero on the number line.

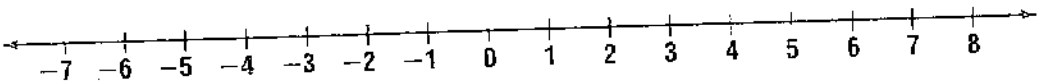


6 is 6 units from 0. The absolute value of 6 is 6. $|6| = 6$

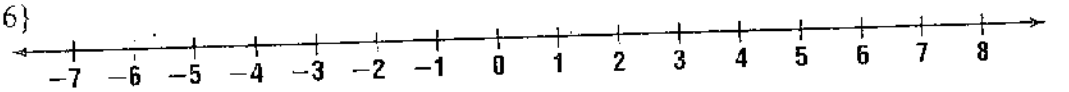
-6 is 6 units from 0. The absolute value of -6 is 6. $|-6| = 6$

Graph each set of points on the number line.

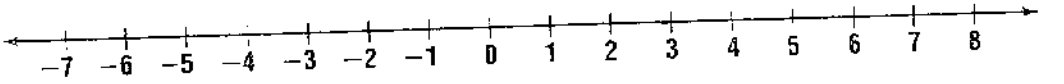
1. $\{-6, -3, 2, 5\}$



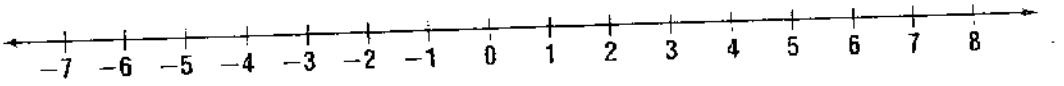
2. $\{-2, -4, 0, -6\}$



3. $\{5, 7, -3, -4\}$



4. $\{0, -1, 1, -5\}$



Find each absolute value.

5. $|19|$

6. $|-21|$

7. $|-8|$

8. $|15 + 15|$

Name _____ Date _____

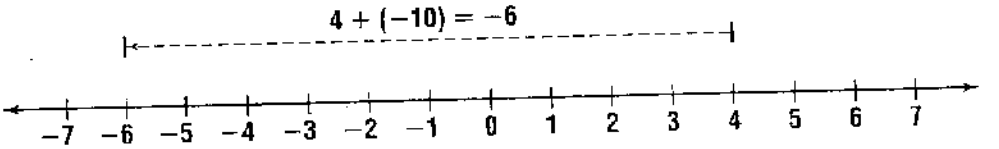
2-3 Study Guide

Adding Integers

You can use a number line to add integers. Locate the first addend on the number line. Move right if the second addend is positive. Move left if the second addend is negative.

Example 1 **Solve $d = 4 + (-10)$.**

Start at 4. Since -10 is negative, move left 10 units.



So, $d = -6$.

When you add integers, remember the following.

The sum of two positive integers is positive.
The sum of two negative integers is negative.
The sum of a positive integer and a negative integer is positive if the positive integer has the greater absolute value and negative if the negative integer has the greater absolute value.

Examples **2** **Solve $t = 24 + (-13)$.**

$|24| > |-13|$, so the sum is positive.
The difference of 24 and 13 is 11, so $t = 11$.

3 **Solve $-17 + 16 = m$.**

$|-17| > |16|$, so the sum is negative.
The difference of 17 and 16 is 1, so $m = -1$.

Solve each equation.

1. $h = 15 + (-10)$
2. $-20 + (-9) = g$
3. $s = -9 + 39$
4. $-50 + 20 = p$
5. $y = -11 + (-19)$
6. $z = 12 + 15$
7. $500 + (-250) = w$
8. $e = 48 + (-8)$
9. $-80 + (-20) = v$
10. $t = -109 + 49$
11. $544 + 206 = b$
12. $4 + (-16) = d$

Evaluate each expression if $a = 10$, $b = -10$, and $c = 5$.

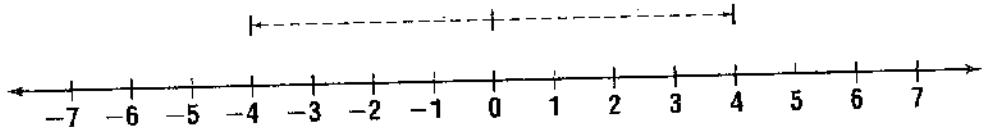
13. $a + 23$
14. $b + (-7)$
15. $b + c$
16. $-20 + c$
17. $a + (-56)$
18. $23 + b$

Name _____ Date _____

2-5 Study Guide

Subtracting Integers

An integer and its **opposite** are the same distance from 0 on a number line.
4 and -4 are opposites.



The sum of an integer and its opposite is 0. $-4 + 4 = 0$

To subtract an integer, add its opposite.

Examples **1** **Solve $4 - 8 = y$.**

$4 - 8 = y$ *To subtract 8,*
$4 + (-8) = y$ *add -8.*
$-4 = y$

2 **Solve $4 - (-4) = x$.**

$4 - (-4) = x$ *To subtract -4,*
$4 + 4 = x$ *add 4.*
$8 = x$

Solve each equation.

1. $b = 16 - (-3)$
2. $n = -8 - 25$
3. $w = -11 - (-6)$
4. $-19 - (-3) = h$
5. $65 - (-45) = k$
6. $-19 - 20 = c$
7. $s = 100 - (-72)$
8. $z = -44 - (-33)$
9. $d = 89 - 17$
10. $-80 - (-35) = p$
11. $98 - (-90) = f$
12. $-75 - 23 = g$

Evaluate each expression if $w = -9$, $x = 3$, and $y = -8$.

13. $60 - w$
14. $12 - y$
15. $x - (-12)$
16. $w - x$
17. $y - w$
18. $x - y$
19. $-31 - y$
20. $w - 50$
21. $12 - x$

Name _____ Date _____

2-7 Study Guide

Multiplying Integers

The product of two positive integers is positive.

Examples

$k = 4(9)$
$k = 36$

$m = 6(7)(2)$
$m = 42(2)$
$m = 84$

$j = 5(3)(5)$
$j = 15(5)$
$j = 75$

The product of two negative integers is positive.

Examples

$h = (-7)(-5)$
$h = 35$

$v = (-9)^2$
$v = -9(-9)$
$v = 81$

$z = (-25)(-7)$
$z = 175$

The product of a positive integer and a negative integer is negative.

Examples

$c = (-20)(8)$
$c = -160$

$g = (70)(-3)(2)$
$g = -210(2)$
$g = -420$

$y = (-6)(5)^2$
$y = (-6)25$
$y = -150$

Solve each equation.

1. $z = 8(9)$
2. $t = -4(8)$
3. $b = 4(-5)$
4. $-5(-5) = h$
5. $-40(6) = n$
6. $20(-9) = y$
7. $2(-5)(-8) = h$
8. $g = -6(-3)(-2)$
9. $w = -5(10)(-4)$
10. $t = (-20)^2$
11. $-10(9)^2 = p$
12. $r = (5)^2 \cdot (-10)^2$

Evaluate each expression if q = −4, r = −8, and s = 10.

13. $2qr$
14. $-10sq$
15. $-8s^2$
16. qrs
17. $-3sr$
18. $5r^2$

Name _____ Date _____

2-8 Study Guide

Dividing Integers

If two integers have the same sign, their quotient is positive.

Examples

$m = 420 \div 7$	*The signs are the same.*
$m = 60$	*The quotient is positive.*
$d = 290 \div 29$	*The signs are the same.*
$d = 10$	*The quotient is positive.*

If two integers have different signs, their quotient is negative.

Examples

$f = -25 \div 5$	*The signs are different.*
$f = -5$	*The quotient is negative.*
$a = \frac{20}{-4}$	*The signs are different.*
$a = -5$	*The quotient is negative.*

Solve each equation.

1. $81 \div -9 = c$
2. $r = \frac{-72}{8}$
3. $b = 680 \div 4$
4. $-325 \div (-5) = p$
5. $-700 \div 35 = y$
6. $t = -560 \div (-80)$
7. $k = \frac{285}{19}$
8. $-96 \div (-32) = g$
9. $840 \div (-7) = z$
10. $-189 \div 9 = j$
11. $m = 248 \div (-4)$
12. $z = 408 \div 51$

Evaluate each expression if q = −48, r = 6, and t = −12.

13. $-108 \div t$
14. $\frac{q}{-8}$
15. $312 \div r$
16. $\frac{q}{r}$
17. $6r \div t$
18. $-144 \div t$

Name _____ Date _____

3-3 Study Guide

Solving Proportions

A **proportion** is an equation that shows that two ratios are equivalent. To determine if a pair of ratios form a proportion, find the *cross products*.

Examples **Determine whether each pair of ratios forms a proportion.**

1 **$\frac{30}{48}$ and $\frac{15}{24}$**

Find the cross products.

$30 \times 24 = 720$ $\quad$ $48 \times 15 = 720$

Since the cross products are equal, the ratios form a proportion.

2 **$\frac{20}{24}$ and $\frac{12}{18}$**

Find the cross products.

$20 \times 18 = 360$ $\quad$ $24 \times 12 = 288$

Since the cross products are not equal, the ratios do not form a proportion.

You can also use cross products to solve proportions.

Example 3 **Solve $\frac{12}{30}$ and $\frac{k}{70}$.**

$30 \times k = 12 \times 70$

$30k = 840$

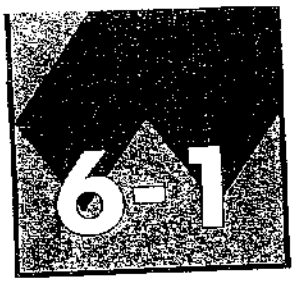
$k = 28$ The solution is 28.

Determine whether each pair of ratios forms a proportion.

1. $\frac{4}{6}, \frac{16}{24}$
2. $\frac{15}{25}, \frac{10}{20}$
3. $\frac{9}{12}, \frac{10}{15}$
4. $\frac{27}{72}, \frac{12}{32}$
5. $\frac{7}{15}, \frac{13}{32}$
6. $\frac{10}{24}, \frac{6}{14}$
7. $\frac{32}{12}, \frac{56}{21}$
8. $\frac{15}{6}, \frac{10}{3}$

Solve each proportion.

9. $\frac{3}{4} = \frac{m}{16}$
10. $\frac{y}{3} = \frac{9}{27}$
11. $\frac{12}{y} = \frac{3}{5}$
12. $\frac{2}{7} = \frac{14}{x}$
13. $\frac{7}{15} = \frac{21}{c}$
14. $\frac{9}{r} = \frac{18}{24}$
15. $\frac{p}{5} = \frac{5}{25}$
16. $\frac{11}{2} = \frac{m}{8}$



Name _____ Date _____

Study Guide

Divisibility Patterns

The following rules will help you determine if a number is divisible by 2, 3, 4, 5, 6, 8, 9, or 10.

A number is divisible by:

- 2 if the ones digit is divisible by 2.
- 3 if the sum of the digits is divisible by 3.
- 4 if the number formed by the last two digits is divisible by 4.
- 5 if the ones digit is 0 or 5.
- 6 if the number is divisible by 2 and 3.
- 8 if the number formed by the last three digits is divisible by 8.
- 9 if the sum of the digits is divisible by 9.
- 10 if the ones digit is 0.

Example **Determine whether 2,120 is divisible by 2, 3, 4, 5, 6, 9, or 10.**

2: The ones digit is divisible by 2.
2,120 is divisible by 2.

3: The sum of the digits $2 + 1 + 2 + 0 = 5$, is not divisible by 3.
2,120 is not divisible by 3.

4: The number formed by the last two digits, 20, is divisible by 4.
2,120 is divisible by 4.

5: The ones digit is 0.
2,120 is divisible by 5.

6: The number is divisible by 2 but not by 3.
2,120 is not divisible by 6.

8: The number formed by the last 3 digits, 120, is divisible by 8.
2,120 is divisible by 8.

9: The sum of the digits, $2 + 1 + 2 + 0 = 5$, is not divisible by 9.
2,120 is not divisible by 9.

10: The ones digit is 0.
2,120 is divisible by 10.
2,120 is divisible by 2, 4, 5, 8, and 10.

Determine whether the first number is divisible by the second number. Write yes or no.

1. 4,829; 9
2. 482; 2
3. 1,692; 6
4. 1,355; 10
5. 633; 3
6. 724; 4
7. 3,714; 8
8. 912; 9
9. 559; 5
10. 20,454; 6
11. 616; 8
12. 3,000; 4

Name _____ Date _____

6-2 Study Guide

Prime Factorization

A whole number greater than 1 with exactly two factors, 1 and itself, is called a **prime number.**

Example 1 19 is a prime number. It has only 1 and 19 as factors.

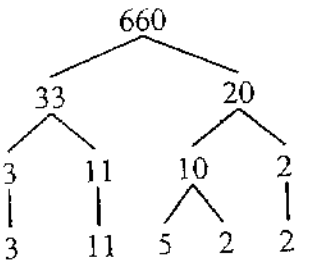
A whole number greater than 1 with more than two factors is called a **composite number.**

Example 2 18 is a composite number. It has 1, 2, 3, 6, 9, and 18 as factors.

The numbers 0 and 1 are neither prime nor composite.

A composite number may be written as the product of prime numbers. This product is the **prime factorization** of the number.

Example 3 **Find the prime factorization of 660.**



Write the number as the product of two factors.

Continue to factor until only prime factors remain.

The prime factorization of 660 is $3 \cdot 11 \cdot 5 \cdot 2 \cdot 2$.

Determine whether each number is prime, composite, or neither.

1. 28 **2.** 47 **3.** 39 **4.** 61

5. 53 **6.** 0 **7.** 159 **8.** 1

Find the prime factorization of each number.

9. 30 **10.** 155 **11.** 169 **12.** 100

13. 86 **14.** 98 **15.** 495 **16.** 40

Name _____ Date _____

7-2 Study Guide

Adding and Subtracting Unlike Fractions

To add or subtract fractions or mixed numbers with unlike denominators, rename the fractions with a common denominator. Then add or subtract.

Examples **1** Solve $a = -\frac{5}{8} + \left(-\frac{3}{4}\right)$. *The least common denominator of 8 and 4 is 8.*

$a = -\frac{5}{8} + \left(-\frac{6}{8}\right)$ *Rename $-\frac{3}{4}$ as $-\frac{6}{8}$.*

$a = -\frac{11}{8}$ *Add.*

$a = -1\frac{3}{8}$ *Rename the improper fraction as a mixed number.*

2 Solve $c = -2\frac{3}{5} - 1\frac{1}{2}$. *The least common denominator of 5 and 12 is 10.*

$c = -2\frac{6}{10} - 1\frac{5}{10}$ *Rename $\frac{3}{5}$ as $\frac{6}{10}$. Rename $\frac{1}{2}$ as $\frac{5}{10}$.*

$c = -3\frac{11}{10}$ *Subtract.*

$c = -4\frac{1}{10}$ *Rename $\frac{11}{10}$ as $1\frac{1}{10}$.*

3 Solve $r = 5\frac{1}{4} - 2\frac{2}{3}$. *The least common denominator of 4 and 3 is 12.*

$r = 5\frac{3}{12} - 2\frac{8}{12}$ *Rename $\frac{1}{4}$ as $\frac{3}{12}$. Rename $\frac{2}{3}$ as $\frac{8}{12}$.*

$r = 4\frac{15}{12} - 2\frac{8}{12}$ *Rename $5\frac{3}{12}$ as $4\frac{15}{12}$.*

$r = 2\frac{7}{12}$ *Subtract.*

Solve each equation. Write the solution in simplest form.

1. $n = \frac{3}{4} + \frac{1}{3}$

2. $\frac{7}{8} - \frac{2}{3} = k$

3. $-\frac{11}{12} - \frac{1}{2} = y$

4. $1\frac{1}{2} + \left(-1\frac{1}{5}\right) = v$

5. $x = -3\frac{2}{3} + \left(-1\frac{1}{6}\right)$

6. $m = 10\frac{11}{12} + 9\frac{3}{8}$

7. $p = 7\frac{1}{3} - \left(-2\frac{5}{9}\right)$

8. $-\frac{15}{16} - \frac{3}{8} = f$

9. $3\frac{4}{5} - \left(-5\frac{1}{2}\right) = c$

10. $2\frac{3}{4} + \left(-6\frac{3}{8}\right) = a$

11. $-9\frac{5}{6} - \left(-3\frac{2}{3}\right) = q$

12. $m = \frac{5}{9} - \frac{1}{3}$

7-3

Name _____ Date _____

Study Guide

Multiplying Fractions

To multiply fractions, multiply the numerators and multiply the denominators. Use the rules for multiplying integers when you multiply negative fractions.

Example 1 Solve $k = -\frac{4}{7} \times \frac{5}{9}$.

$k = -\frac{4 \times 5}{7 \times 9}$ *Multiply the numerators. Multiply the denominators.*

$k = -\frac{20}{63}$ *The product of two rational numbers with different signs is negative.*

Example 2 Solve $n = 3\frac{1}{3} \times 2\frac{1}{5}$.

$n = \frac{{}^{2}\cancel{10}}{3} \times \frac{11}{\cancel{5}_{1}}$ *Rename $3\frac{1}{3}$ as $\frac{10}{3}$. Rename $2\frac{1}{5}$ as $\frac{11}{5}$. The GCF of 10 and 5 is 5. Divide 10 and 5 by 5.*

$n = \frac{2 \times 11}{3 \times 1} = \frac{22}{3}$ *Multiply the numerators. Multiply the denominators.*

$n = 7\frac{1}{3}$ *Simplify.*

Solve each equation. Write the solution in simplest form.

1. $k = \frac{2}{3} \times \frac{3}{5}$

2. $-\frac{1}{2} \times \frac{7}{9} = m$

3. $-\frac{4}{7} \times \left(-\frac{7}{8}\right) = n$

4. $1\frac{1}{2} \times 1\frac{2}{3} = v$

5. $x = -2\frac{1}{4} \times \frac{2}{9}$

6. $r = -8 \times \left(-\frac{3}{4}\right)$

7. $p = \frac{3}{8} \times \left(-2\frac{2}{3}\right)$

8. $6\frac{1}{2} \times \frac{4}{5} = w$

9. $9 \times \left(-2\frac{2}{3}\right) = h$

10. $4\left(5\frac{3}{4}\right) = f$

11. $c = \left(\frac{1}{2}\right)^2$

12. $t = \frac{4}{7} \times \left(-\frac{2}{3}\right)$

NAME

Practice Worksheet 1-1

Use after page 3.

This *answer* needs a *question!*

Answer: John F. Kennedy

To find the *question:*

- Use a ruler to match each exercise with its answer.
- Then write each letter over its matching exercise number in the Decoder.

1.	3 less than a number x	$x - 6$	D
2.	3 more than a number x	$3 - x$	L
3.	a number x decreased by 6	$x + 6$	P
4.	the sum of a number y and 3	$y - 6$	U
5.	3 decreased by a number x	$x - 3$	R
6.	a number y minus 3	$x + y$	G
7.	a number x increased by 6	$x + 3$	Y
8.	6 increased by a number y	$3 - z$	B
9.	a number y less 6	$x - y$	E
10.	a number z plus 3	$y + 3$	I
11.	a number x plus a number y	$x - x$	O
12.	3 decreased by a number z	$y - 3$	S
13.	a number x increased by itself	$y - x$	C
14.	a number x decreased by a number y	$z - 3$	W
15.	3 minus the number y	$6 + y$	F
16.	a number x decreased by itself	$6 - x$	H
17.	a number y decreased by a number x	$z + 3$	N
18.	6 decreased by a number x	$3 - y$	T
19.	3 less than a number z	$x + x$	A

DECODER

? ? ?

1	16	10	13	5	3	1	14	13	11	13	10	4	6	15	18	14	
16	5	3	14	6	15	7	14	1	6	16	10	15	16	12	14		
14	5	14	17	15	14	3	7	1	14	6	4	3	14	10	15	16	8
15	18	14	9	6	13	19	18	16	19	13	6	15	18	14			
2	16	9	10	11	14	6	15	?									

NAME

Practice Worksheet 1-2

Use after page 5.

???? Trivia Question ????

Sports

What professional basketball team has won the most championships?

To check your answer:

- Substitute and evaluate each expression.
- Then cross out each box containing an answer in the Decoder.
- The remaining letters spell out the answer.

r	s	t	w	x	y
4	8	6	5	7	3

1. $w + 12$	**2.** $x - 4$	**3.** $t + y$	**4.** $s - x$
5. $r + s + 9$	**6.** $s + x - w$	**7.** $t + x - 5$	**8.** $s + s - y$
9. $w + w + w$	**10.** $3.2 - r + r$	**11.** $9 + r + t$	**12.** $s + t - y$
13. x decreased by w	**14.** s more than six	**15.** the sum of r and y	**16.** one less than w
17. 12 more than the sum of s and t	**18.** the sum of x and s decreased by y	**19.** The sum of r and x increased by w	**20.** sixteen decreased by the sum of x and y

DECODER

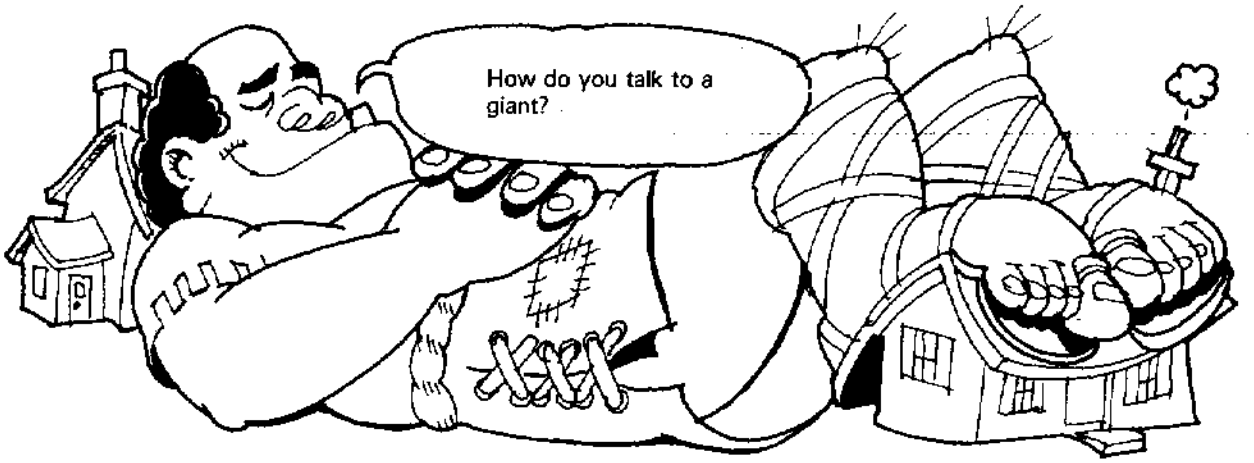
3.2 **L**	3 **O**	5 **B**	13 **S**	21 **A**	18 **O**	17 **N**	8 **G**	2 **E**	20 **S**	9 **L**
19 **E**	22 **T**	5 **O**	7 **S**	23 **N**	1 **L**	18 **C**	10 **A**	4 **K**	26 **E**	22 **E**
14 **R**	15 **S**	23 **L**	11 **N**	24 **T**	12 **E**	5 **I**	27 **C**	16 **T**	6 **S**	27 **S**

Answer: _____

NAME

Practice Worksheet 4-3

Use after page 97.



To check your answer:

- Use a ruler to match each sum with an equivalent sum.
- Each line you draw will cross a letter.
- The letters without lines through them spell out the answer.

1. $+7 + +2$	$-2 + -1$	$+3 + +1$	
2. $+6 + -5$	$+5 + +6$	$+5 + +4$	
3. $-9 + +6$	$+7 + -5$	$-10 + +2$	
4. $-3 + -5$	$+10 + -1$	$+13 + -2$	
5. $+7 + +4$	$+1 + 0$	$-5 + +2$	
6. $-3 + +7$	$-5 + -1$	$-7 + +2$	
7. $-9 + +11$	$-6 + +10$	$-8 + +10$	
8. $+5 + -10$	$-6 + -2$	$-3 + -4$	
9. $-13 + -6$	$-10 + +10$	$-20 + +1$	
10. $-12 + +6$	$-10 + -9$	$+3 + -3$	
11. $-7 + +7$	$-4 + -1$	$-8 + -2$	
12. $+8 + -1$	$-20 + +2$	$-9 + +3$	
13. $-9 + -9$	$+5 + -15$	$-10 + -8$	
14. $-6 + -4$	$-3 + -10$	$+6 + +1$	
15. $+8 + -3$	$-5 + -2$	$-3 + -4$	
16. $-9 + +5$	$+1 + -10$	$-6 + +2$	
17. $-6 + -3$	$+2 + +3$	$-4 + +9$	
18. $-10 + +3$	$+1 + -5$	$-13 + +4$	

Answer: _____

NAME

Practice Worksheet 4-4

Use after page 99.

SKILL PRACTICE

Find and correct ten errors on Dick's quiz.

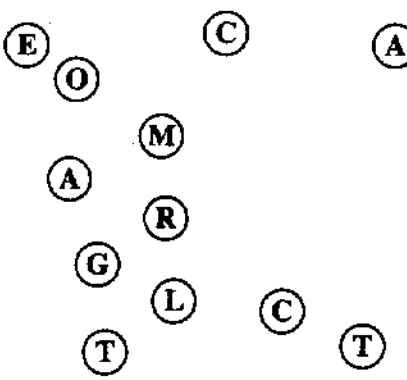
INTEGERS QUIZ Dick Saylor

Give each difference.

1. $^{+}7 - {}^{-}5 =$ $^{+}12$
2. $^{+}7 - 0 =$ $^{+}7$
3. $^{+}6 - {}^{-}4 =$ $^{+}2$
4. $^{+}4 - {}^{+}6 =$ $^{-}2$
5. $^{+}12 - {}^{+}5 =$ $^{-}7$
6. $^{-}3 - {}^{+}9 =$ $^{-}12$
7. $^{-}5 - {}^{-}3 =$ $^{+}2$
8. $0 - {}^{+}6 =$ $^{-}6$
9. $^{-}8 - {}^{-}2 =$ $^{+}6$
10. $^{+}8 - {}^{+}3 =$ $^{+}5$
11. $^{-}12 - {}^{-}8 =$ $^{-}20$
12. $^{+}3 - {}^{-}3 =$ 0
13. $^{+}9 - {}^{+}8 =$ $^{-}17$
14. $^{-}7 - {}^{-}7 =$ 0
15. $^{+}14 - {}^{+}13 =$ $^{-}1$
16. $^{-}7 + {}^{-}4 =$ $^{-}11$
17. $^{-}3 - {}^{+}2 =$ $^{+}5$
18. $^{+}6 - {}^{-}6 =$ 0

Use a ruler to match each mathematical expression with its word expression. Each line you draw will cross a letter. The letters without lines through them spell out a message.

19. the sum of n and $^{-}6$	$n - {}^{-}6$
20. $^{-}6$ decreased by a number n	$n + {}^{-}6$
21. a number n less $^{-}6$	$n - {}^{+}6$
22. a number n decreased by $^{+}6$	$^{-}6 - n$
23. $^{-}6$ increased by a number n	$^{+}6 - n$
24. a number n plus $^{+}6$	$^{-}6 + n$
25. $^{+}6$ decreased by a number n	$n + {}^{+}6$



Message: _____