Name: _____

Bowling Percentages

Directions: Determine the total percentage of spares and strikes on family bowling day.

The Costanza Family of five went ten-pin bowling last Friday. They played two strings. Bobby Costanza kept score.

In ten-pin bowling, each bowler rolls the ball twice in his attempt to hit the pins. A spare occurs when the bowler knocks down all 10 pins in two rolls A strike is when the bowler knocks down all 10 pins in one roll.

Bobby tallied the number of strikes and spares that were bowled for each string.

name	number of spares; string 1	total
Mom	////	
Dad	~~###~~ /	
Bob	///	
Sue	~~###~~ ///	
Jay		

name	number of strikes; string 1	total
Mom	//	
Dad	////	
Bob	~~###~~	
Sue	/	
Jay	~~###~~ ///	

name	number of spares; string 2	total
Mom	~~###~~ /	
Dad	~~###~~	
Bob	////	
Sue	~~###~~ /	
Jay	//	

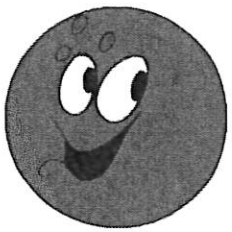
name	number of strikes; string 2	total
Mom	/	
Dad	///	
Bob	/	
Sue	/	
Jay	////	

1. What percentage of family members bowled a spare at least three times in string 1?

2. What percentage of all strikes were bowled by girls?

3. What percentage of all spares were bowled by boys?

4. What percentage of the strikes in both strings were made by Jay?

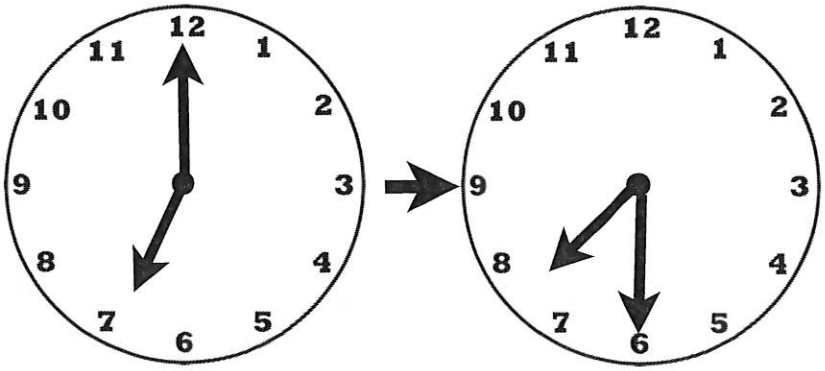


5. What percentage of the spares in both strings were made by Sue?

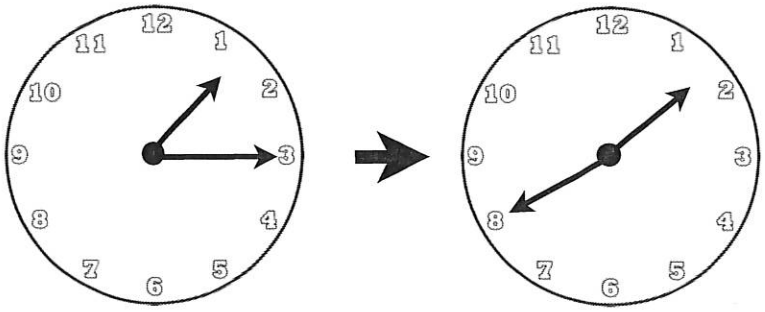
Name: _____

Elapsed Time

Directions: Calculate and write the elapsed time.

1. 

The Elapsed Time is:

2. 

The Elapsed Time is:

3. 1:27 → 4:52

The Elapsed Time is:

4. Saturday, 4:59 p.m. → Sunday, 7:36 a.m.

The Elapsed Time is:

5. December 7, 1941 → August 15, 1945

The Elapsed Time is:

Name: _____

The Fibonacci Sequence

Directions: Decipher and complete the number patterns.

The Fibonacci Sequence is this series of numbers:

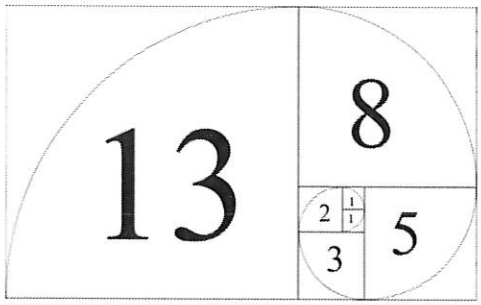
0, 1, 1, 2, 3, 5, 8, 13, 21, 34, ...

Starting with 0, 1, 1, the next number is found by adding the first two...
1 + 1 = 2, 1 + 2 = 3, 2 + 3 = 5, 3 + 5 = 8, etc.

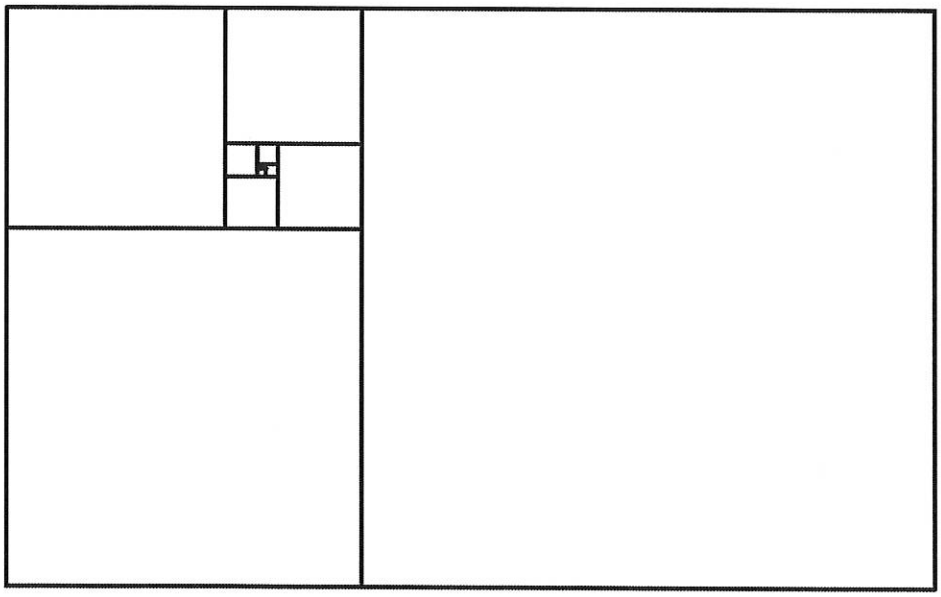
Can you tell what number comes after 34? _____ **Next?** _____

Something really interesting about Fibonacci Numbers...

When you draw squares with the widths of the Fibonacci Numbers, it will create a spiral as you draw from opposite corner to opposite corner. Here's one for numbers up to 13.



Now, draw a spiral for Fibonacci Numbers up to 34!



CHAPTER 2

Study Guide: Review

Vocabulary

Complete the sentences below with vocabulary words from the list above.

1. A(n) ___?___ contains one or more variables.
2. A(n) ___?___ is a mathematical statement that says two quantities are equal.
3. In the equation $12 + t = 22$, t is a ___?___.

EXAMPLES

EXERCISES

2-1 Variables and Expressions (pp. 50–53)

■ **Evaluate the expression to find the missing values in the table.**

n	$3n + 4$
1	7
2	
3	

$n = 1$; $3 \times 1 + 4 = 7$
$n = 2$; $3 \times 2 + 4 = 10$
$n = 3$; $3 \times 3 + 4 = 13$

The missing values are 10 and 13.

■ **A rectangle is 3 units wide. How many square units does the rectangle cover if it is 5, 6, 7, or 8 units long?**

ℓ	w	$\ell \times w$
5	3	15
6	3	
7	3	
8	3	

$5 \times 3 = 15$ square units
$6 \times 3 = 18$ square units
$7 \times 3 = 21$ square units
$8 \times 3 = 24$ square units

The rectangle will cover a total of 15, 18, 21, or 24 square units.

Evaluate each expression to find the missing values in the tables.

4.

y	$y \div 7$
56	8
49	
42	

5.

k	$k \times 4 - 6$
2	2
3	
4	

6. A rectangle is 9 units long. How many square units does the rectangle cover if it is 1, 2, 3, or 4 units wide?
7. Karen buys 3 bouquets of flowers. How many flowers does she buy if each bouquet contains 10, 11, 12, or 13 flowers?
8. Ron buys 5 bags of marbles. How many marbles does he buy if each bag contains 15, 16, 17, or 18 marbles?

EXAMPLES

EXERCISES

2-2 Translating Between Words and Math (pp. 54–57)

Write each phrase as a numerical or algebraic expression.

- 617 minus 191

  $617 - 191$

- d multiplied by 5

  $5d$ or $5 \cdot d$ or $(5)(d)$

Write two phrases for each expression.

- $a \div 5$
  - a divided by 5
  - the quotient of a and 5
- $67 + 19$
  - the sum of 67 and 19
  - 19 more than 67

Write each phrase as a numerical or algebraic expression.

9. 15 plus b

10. the product of 6 and 5

11. 9 times t

12. the quotient of g and 9

Write two phrases for each expression.

13. $4z$

14. $15 + x$

15. $54 \div 6$

16. $\frac{m}{20}$

17. $3 - y$

18. $5{,}100 + 64$

19. $y - 3$

20. $g - 20$

2-3 Translating Between Tables and Expressions (pp. 58–61)

- **Write an expression for the sequence in the table.**

Position	1	2	3	4	n
Value of Term	9	18	27	36	

To go from the position to the value of the term, multiply the position by 9. The expression is $9n$.

Write an expression for the sequence in each table.

21.

Position	1	2	3	4	n
Value of Term	4	7	10	13	

22.

Position	1	2	3	4	n
Value of Term	0	1	2	3	

2-4 Equations and Their Solutions (pp. 66–69)

- **Determine whether the given value of the variable is a solution.**

$f + 14 = 50$ for $f = 34$

$f + 14 = 50$

$34 + 14 \stackrel{?}{=} 50$ *Substitute 34 for f.*

$48 \neq 50$ *Add.*

34 is not a solution.

Determine whether the given value of the variable is a solution.

23. $28 + n = 39$ for $n = 11$

24. $12t = 74$ for $t = 6$

25. $y - 53 = 27$ for $y = 80$

26. $96 \div w = 32$ for $w = 3$

CRYPTIC QUIZ

1. What happened when Tarzan called the King of the Jungle?

11	7	3		17	16	6	13		1	5	14		12	9	14	2

2. Whom did Smedley Jolt ask to help him cook hamburgers?

7	16	14		10	15	16	17	17		4	15	16	3	13	8	

Do each exercise below. Find your answer in the appropriate answer column and notice the letter next to it. Each time the exercise number appears in the code, write this letter above it.

(1) $7{,}388 + 5{,}967$

(2) $947 - 269$

(3) $8{,}176 \times 8$

(4) 69×74

(5) $5{,}086 + 397 + 8{,}464$

(6) 879×95

(7) 274×600

(8) $(60 \times 50) - (40 \times 30)$

(9) $8{,}501 - 3{,}934$

(10) $72{,}600 - 6{,}854$

(11) $58{,}493 \times 6$

(12) $17{,}338 + 49 + 9{,}506 + 618$

(13) $4{,}058 \times 79$

(14) 836×406

Answers 1–8	
R	82,905
H	164,400
E	65,408
L	1,650
W	13,355
V	5,716
A	13,947
K	193,400
Y	678
D	1,800
O	83,505
B	63,908
F	5,106
M	538

Answers 9–17	
B	27,511
J	332,958
I	9,630
S	339,416
L	1,771
G	65,746
C	8,230
U	4,567
R	7,840
N	320,582
P	1,851
T	350,958
K	317,482
V	344,516

(15) $10{,}000 - (8 \times 5 \times 54)$

(16) $(100 \times 27) + (10 \times 693)$

(17) Gyro bought a car priced at $7,589. He agreed to make payments of $260 per month for 36 months. How much more than the actual price will Gyro pay?

$\$$_____

Did You Hear About ...

A	B	C	D	E	F
G	H	I	J	K	L
M	N	O	P	Q	R ?

Do each exercise and find your answer in the appropriate answer column. Notice the word under the answer. Write this word in the box containing the letter of the exercise.

Answers A–I:

6 R29 FROM
8 TO
54 R18 HIS
9 R17 FIT
4 R9 THE
6 R13 WHO
17 R21 HAIR
24 R11 GO
9 R33 HAD
7 R28 KID
23 R6 GET
16 R32 WORK
5 R56 FINALLY
55 R3 SOME

(A) $30\overline{)129}$ (B) $80\overline{)588}$ (C) $50\overline{)313}$

(D) $90\overline{)506}$ (E) $40\overline{)393}$ (F) $60\overline{)480}$

(G) $70\overline{)1,616}$ (H) $30\overline{)1,638}$ (I) $40\overline{)701}$

(J) $90\overline{)3,480}$ (K) $50\overline{)4,600}$ (L) $80\overline{)4,834}$

(M) $1,891 \div 20$ (N) $15,207 \div 60$

(O) $53,875 \div 70$ (P) $16,327 \div 40$

(Q) A recycling center received 3,250 pounds of newspaper. It was tied in 50-pound bundles. How many bundles were there?

(R) Traveling at 40 miles per hour, a car uses 30 gallons of gas to travel 810 miles. What is the average number of miles per gallon?

Answers J–R:

769 R45 STAND
409 R23 TO
93 R3 TIME
65 ANY
94 R11 MOTHER
24 SHAMPOO
92 BECAUSE
27 LONGER
62 THAT
253 R27 COULDN'T
408 R7 IT
38 R60 CUT
768 R9 WASH
60 R34 HIS

EXAMPLES

EXERCISES

2-5 Addition Equations (pp. 70–73)

■ **Solve the equation $x + 18 = 31$.**

$x + 18 = 31$ — *18 is added to x.*
$-18 \quad -18$ — *Subtract 18 from both*
$x = 13$ — *sides to undo the addition.*

Solve each equation.

27. $4 + x = 10$ **28.** $n + 10 = 24$

29. $c + 71 = 100$ **30.** $y + 16 = 22$

31. $44 = p + 17$ **32.** $94 + w = 103$

33. Melinda's new HD radio will play 93 channels. This is 26 more channels than her old radio played. How many channels could she listen to with her old radio?

2-6 Subtraction Equations (pp. 74–76)

■ **Solve the equation $c - 7 = 16$.**

$c - 7 = 16$ — *7 is subtracted from c.*
$+7 \quad +7$ — *Add 7 to each side to*
$c = 23$ — *undo the subtraction.*

Solve each equation.

34. $28 = k - 17$ **35.** $d - 8 = 1$

36. $p - 55 = 8$ **37.** $n - 31 = 36$

38. $3 = r - 11$ **39.** $97 = w - 47$

40. There are 14 Winter Olympics sports. This is 17 fewer than the number of Summer Olympics sports. How many Summer sports are there?

2-7 Multiplication Equations (pp. 77–80)

■ **Solve the equation $6x = 36$.**

$6x = 36$ — *x is multiplied by 6.*
$\frac{6x}{6} = \frac{36}{6}$ — *Divide both sides by 6 to*
$x = 6$ — *undo the multiplication.*

Solve each equation.

41. $5v = 40$ **42.** $27 = 3y$

43. $12c = 84$ **44.** $18n = 36$

45. $72 = 9s$ **46.** $11t = 110$

47. The average American eats about 30 pounds of cheese per year. This is $\frac{3}{5}$ the amount eaten by the average French person. How many pounds of cheese does a French person eat in one year?

2-8 Division Equations (pp. 81–83)

■ **Solve the equation $\frac{k}{4} = 8$.**

$\frac{k}{4} = 8$ — *k is divided by 4.*
$4 \cdot \frac{k}{4} = 4 \cdot 8$ — *Multiply both sides by 4*
$k = 32$ — *to undo the division.*

Solve each equation.

48. $\frac{r}{7} = 6$ **49.** $\frac{t}{5} = 3$

50. $6 = \frac{y}{3}$ **51.** $12 = \frac{n}{6}$

52. $\frac{z}{13} = 4$ **53.** $20 = \frac{b}{5}$