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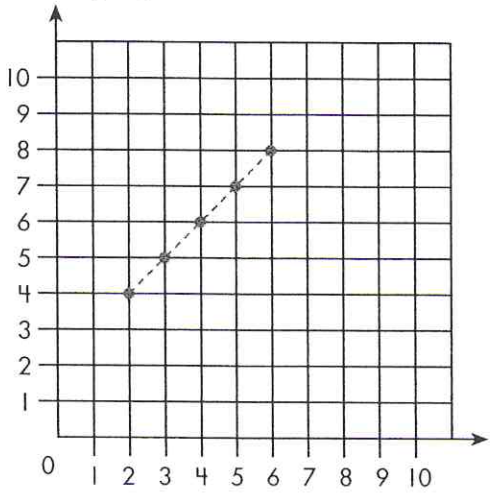
Lesson 7.1 Identifying and Graphing Number Patterns

Complete the table. Then, complete the graph based on the table.

	Add 2	Add 3
1	2	3
2	3	4
3	4	5
4	5	6
5	5	7
6	7	8

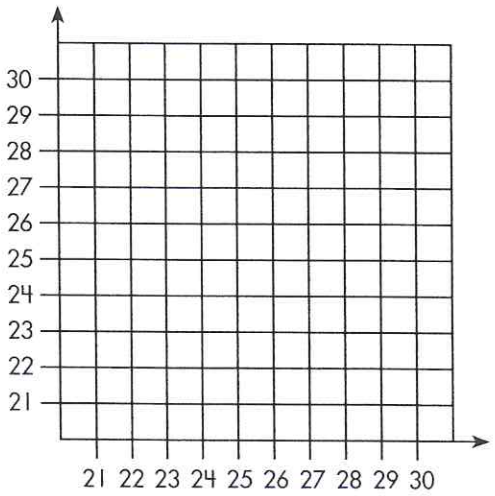


Complete each table and corresponding graph.

a **b**

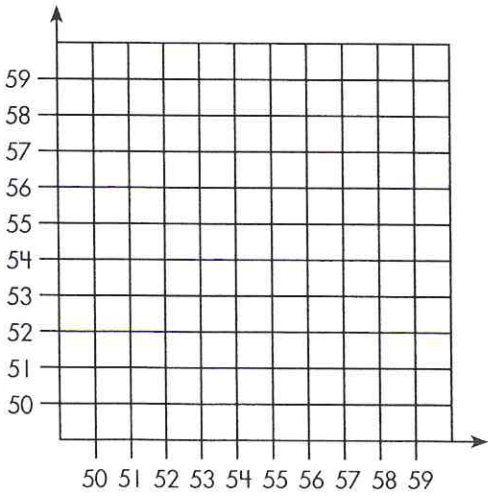
1.

	Add 2	Add 4
21		
22		
23		
24		
25		
26		



2.

	Add 1	Add 3
51		
52		
53		
54		
55		
56		



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Lesson 7.2 Using Parentheses and Brackets

Parentheses, brackets, and braces can be used to show that one part of a mathematical expression should be solved before the rest of the equation.

Calculate the numbers in parentheses first.

$2 \times (3 \times 15) =$

$2 \times 45 = 90$

When a problem has a combination of parentheses, brackets, and braces, work the problem from the inside out.

$[(3 \times 5) + 2] + 6 =$

$[15 + 2] + 6 =$

$17 + 6 = 23$

Find the value of each expression.

	a	b
1.	$(7 \times 5) \times 2 =$ _____	$(135 + 30) + 17$ _____
2.	$(190 + 70) + 30 =$ _____	$[(11 \times 7) \times 5] \times 6 =$ _____
3.	$\{[5 \times (6 - 1)] + 23\} + 17 =$ _____	$[25 \times (8 + 2)] \times 2 =$ _____
4.	$(1245 + 132) + 50 =$ _____	$(130 \times 3) \times 5 =$ _____
5.	$\{70 + [5 \times (2 + 2)]\} + 35 =$ _____	$[4 \times (3 \times 5)] \times 93$ _____
6.	$(25 + 17) + 3 =$ _____	$175 + \{32 + [(3 + 4) \times 2]\} =$ _____

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Lesson 7.3 The Order of Operations

The **order of operations** is used to find the value of an expression with more than one operation.

1. Do all operations within parentheses.
2. Do all multiplication and division in order, from left to right.
3. Do all addition and subtraction in order, from left to right.

$3 \times (4 + 5) + 6 \div 3$	Do the operation inside the parentheses.
$3 \times 9 + 6 \div 3$	Multiply and divide from left to right.
$27 + 2$	Add.
29	

Name the operation that should be done first.

	a	b	c
1.	$7 \times 3 + 2$ _____	$2 + 3 \times 5$ _____	$4 + 3 - 5$ _____
2.	$8 - 6 + 4$ _____	$7 + 9 \div 3$ _____	$12 \div 3 \times 5$ _____
3.	$(3 + 5) \times (3 + 1)$ _____	$(5 - 3) \div 2$ _____	$(2 + 5) \times 3$ _____

Find the value of each expression.

	a	b
4.	$5 \times (5 - 3)$ _____	$5 + 4 \times 3 \div 6$ _____
5.	$20 - 4 \times 3$ _____	$(32 \div 8) \times 2$ _____
6.	$15 \div 3 + 16 \div 4$ _____	$4 \times 3 \div 6 - 1$ _____
7.	$20 \div 5 \times 2$ _____	$(7 \times 8) - (4 \times 9)$ _____
8.	$6 \times 5 - 5 \times 4$ _____	$84 \div (8 + 6) \div 3$ _____
9.	$(7 - 3) \times 2$ _____	$16 \div (8 - 6)$ _____
10.	$(2 \times 5) \times 4$ _____	$2 \times (5 \times 4)$ _____
11.	$8 - (5 + 2)$ _____	$(8 - 5) + 2$ _____
12.	$4 \times (5 + 3)$ _____	$(4 \times 3) + (4 \times 3)$ _____

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Lesson 7.3 The Order of Operations

Find the value of each expression.

	a	b
1.	$9 \div 9 \times (8 + 7) =$ _____	$4 \div (8 - 6) \div 2 =$ _____
2.	$10 \div 5 \times (3 \times 3) =$ _____	$10 + 8 \div 1 - 5 =$ _____
3.	$[4 + 1 + (2 \times 2)] \div 3 =$ _____	$1 \times 2 \times (4 - 2) =$ _____
4.	$\{10 - [(8 + 2) - 8]\} \times 2 =$ _____	$10 + 9 \div (3 \times 3) =$ _____
5.	$10 \div [(1 + 5 \div 6] =$ _____	$5 + 4 - 3 + 9 =$ _____
6.	$4 + 1 + 6 - 4 =$ _____	$2 \times 2 \div (10 - 9) =$ _____
7.	$7 \div (10 + 3 - 6) + 2 =$ _____	$60 - \{[(2 + 7) \div 3] \times 12\} =$ _____

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Lesson 7.4 Simple Expressions

Key words can be used to figure out how to solve written expressions.

5 **more than** 3 **times** the **sum of** 4 and 2 $\quad 5 + [3 \times (4 + 2)]$

Write the expression for each phrase.

1. 2 less than 5 _____

2. 3 times the sum of 4 and 12 _____

3. 10 more than the quotient of 15 and 3 _____

4. 2 increased by 6 times 4 _____

5. $\frac{2}{3}$ of 30 minus 11 _____

6. Twice the difference between 8 and 2 _____

7. 6 times a 4 plus 3 times 4 _____

8. $\frac{1}{4}$ times 8 increased by 11 _____

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Lesson 7.4 Simple Expressions

Use each expression to write simple word problems.

1. $3 \times (2 + 8)$ _____

2. $6 \times (2 - \frac{1}{6})$ _____

3. $5 \times (3 + 5)$ _____

4. $20 \div (3 + 1)$ _____

5. $\frac{1}{4} \times 8 + 11$ _____

6. $12 \times (3 + 5)$ _____

7. $(8 + 4) \div 2$ _____

8. $9 \times 4 + 7$ _____

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Lesson 7.5 Problem Solving

Key words in word problems can be used to create expressions to help solve the problems.

how many more – subtraction
total – addition
of – multiplication
split – division

SHOW YOUR WORK

List the key words in each word problem and name the operation they indicate. Then, solve.

1. Carmen wants to ride The Whirler, the roller coaster, and the log ride. The Whirler costs 3 tickets, the roller coaster costs 6 tickets, and the log ride costs 4 ticket. Carmen has 5 tickets. How many more tickets should Carmen buy?

Carmen should buy _____ more tickets.

1.

2. The high school has basketball, football, and track teams. There are 15 students on the basketball team and twice that number on the football team. There are 23 boys and 13 girls on the track team. If each student only participates in one group, how many students total are there on the basketball, football, and track teams?

There are _____ students on the teams.

2.

3. Nina always takes the same route when she walks her dog. First, she walks 5 blocks to the park. Then, she walks 6 blocks to the school. Finally, she walks 9 blocks home. Nina walks her dog 2 times each day. How many total blocks does Nina's dog walk each day?

Nina's dog walks _____ blocks each day.

3.

4. Julie bought 8 packages of cat food and 3 packages of dog food. Each package of cat food contained 5 cans. Each package of dog food contained 4 cans. How many more cans of cat food than dog food did Julie buy?

Julie bought _____ more cans of cat food.

4.

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Lesson 7.5 Problem Solving

SHOW YOUR WORK

Write the expression needed and solve each problem.

1. Donnell had 15 stickers. He bought 30 stickers from a store in the mall and got 18 stickers for his birthday. Then, Donnell gave 6 of his stickers to his friend Tiger and used 8 to decorate a greeting card. How many stickers does Donnell have left?

Donnell has _____ stickers left.

1.

2. Brandt wants to ride the bumper cars 3 times and the zipper 5 times. It costs 2 tickets to ride the bumper cars and 4 tickets to ride the zipper. How many tickets does Brandt need?

Brandt needs _____ tickets.

2.

3. Briana is in a hiking club. The hiking club went on a hike to see a waterfall. To get to the hike the club members took 5 cars and 6 vans. There were 4 people in each car and 9 people in each van. How many people went on the hike?

_____ people went on the hike.

3.

4. Andy saved $32 in June, $27 in July, and $38 in August. Then Andy spent $18 on school supplies and $47 on new clothes. How much money does Andy have left?

Andy has _____ left.

4.