New

# Pioneers Graded Maths 4

Second Edition



Rasha Al-Shafee
Verified by: Dr. Ibrahim Nofal Karen Smith

AL-ROWAD
www.alrowadpub.com

# Contents


01 Place Values ..... 3
02 Addition Properties ..... 10
03 Multiplication Properties ..... 15
04 Division With Remainders ..... 22
05 Order of Operations ..... 24
06 Variables and Equations ..... 26
07 Estimating Products and Quotients ..... 29
08 Measurements and Time ..... 48
09 Geometry ..... 56
10 Fractions ..... 70
11 Probability ..... 78
12 Making Predictions ..... 79

# 01 Place Values

## Lesson 1 Place Value

Each number can be written three ways.

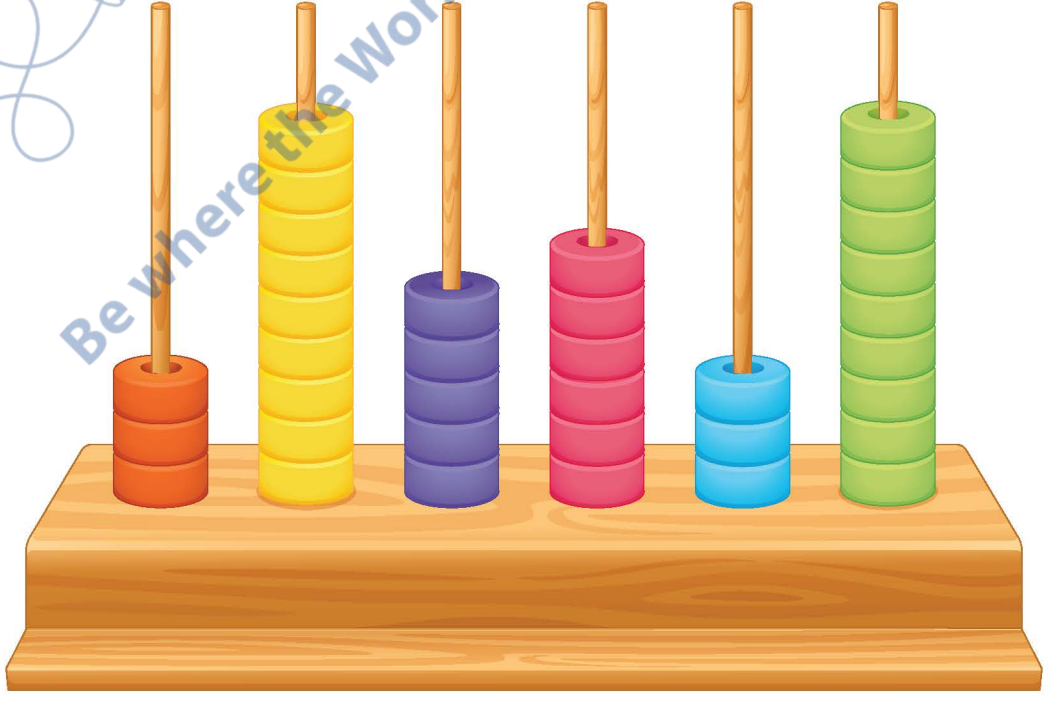
word form: two hundred sixty-seven thousand, six hundred and thirteen

expanded form: 200,000 + 60,000 + 7,000 + 600 + 10 + 3

standard form: 267,613

425,718

700,00 + 60,000 + 1,000 + 200 + 30 + 5



## Write the value of the coloured digit according to its place.

87,538 ..... 66,424 ..... 815,632 .....

## Find each missing number.

9,000 + ☐ + 20 + 1 = 9,621

☐ + 5,000 + 600 + 70 + 9 = 15,679

400,000 + 30,000 + 6,000 + 800 + ☐ + 3 = 436,873



THINK

What is the value of the digit in the hundred thousands place in the number 129,563?

Lesson 2

# Place Value: One Million

1 × 1,000,000 = 1,000,000 ➡ one times one million = one million

10 × 100,000 = 1,000,000 ➡ ten times one hundred thousand = one million

100 × 10,000 = 1,000,000 ➡ one hundred times ten thousand = one million

1,000 × 1,000 = 1,000,000 ➡ one thousand times one thousand = one million

10,000 × 100 = 1,000,000 ➡ ten thousand times one hundred = one million

100,000 × 10 = 1,000,000 ➡ one hundred thousand times ten = one million

1,000,000 × 1 = 1,000,000 ➡ one million times one = one million

How many tens are in 1,000,000?

The chart shows one hundred thousand times ten = one million.

There are one hundred thousand tens in one million.

## Use the chart to answer the following questions.

How many ones are in 1,000,000? .....

.....

How many hundred thousands are in 1,000,000? .....

.....

How many thousands are in 1,000,000? .....

.....

## Use the chart to complete the problems.

1,000 × ☐ = 1,000,000

10 × ☐ = 1,000,000

100 × ☐ = 1,000,000

Lesson 3

# Place Value: Hundred Millions

Here are four ways to write the same number.

standard form: 425,451,760

word form: four hundred twenty-five million, four hundred fifty-one thousand, seven hundred and sixty

short word form: 425 million, 451 thousand, 760

expanded form: 400,000,000 + 20,000,000 + 5,000,000 + 400,000 + 50,000 + 1,000 + 700 + 60

**Write the following number in word form.**

713, 584, 256

.....

.....

**Write the following number in short word form.**

100,000,000 + 8,000,000 + 300,000 + 800 + 40

.....

.....

**Write the number in standard form and expanded form.**

622 million, 852 thousand, 400

.....

.....


Write two 9-digit numbers that have a 4 in the millions place, a 2 in the ten thousands place, and a 9 in the ones place.

.....

.....

Lesson 4

# Comparing Numbers

Compare **52,461** and **52,820**.
Use a number line.


52,820 comes to the right of 52,461 on the number line.
So, 52,461 < 52,820.

## Compare using >, < or = .

632 ◯ 623

6,349 ◯ 1,921

651,201 ◯ 651,201

60,000 ◯ 60 thousand

3,225 ◯ 3,225

301,634 ◯ 103,364

350,219,621 ◯ 530,219,621

4 hundreds ◯ 4,000

5 ten thousands ◯ 500,000

Lesson 5

# Ordering Numbers

Order these numbers from least to greatest.

76,251 74,420 75,429

Line up the digits by place value. 74,420 75,429 76,251

Compare the digits that are different.

6 is the greatest digit, so 76,251 is the greatest number.

Now, compare the other two numbers.

74,420 → 75,429 → 4 < 5 so 74,420 is smaller.

The order of the numbers from least to greatest is:

74,420 75,429 76,251

**Write the numbers in order from least to greatest.**

6,200 2,060 6,002 10,177 11,651 9,364

..... .....

**Write the numbers in order from greatest to least.**

13,426 13,326 13,226 37,115 37,151 36,864

..... .....

# Rounding Numbers

**Round each number to the place of the coloured digit.**

Round the number **135,721** to the nearest thousand.

Find the place you want to round to.

**135,721**

thousands place

If the digit to its right is **5** or greater, then **5** rounds up to the next number ⟶ **6**, followed by three zeros.

**135,721** rounds to **136,000**

If the digit to its right is less than **5**, the number rounds down to the next number.

**19,950**

.....

**4,791,202**

.....

**6,031,061,002**

.....

**42,519**

.....

**37,640**

.....

**734,012**

.....

**4,663,830**

.....


Mike drove 2,769 miles on his cross country trip. He rounded that number to 2,800 miles when he spoke of the trip. To which place value was the number rounded?

SHOW YOUR WORK

# 02 Addition Properties

## Lesson 1 Addition Properties

### The Commutative Property:

**When you change the order of the addends, the sum stays the same.**

$$32 + 67 = 67 + 32$$

$$99 = 99$$

### The Associative Property:

**When three or more numbers are added, the sum is the same regardless of the order of the addends.**

$$(18 + 14) + 25 = (18 + 25) + 14 = 18 + (25 + 14)$$

$$32 + 25 = 43 + 14 = 18 + 39$$

$$57 = 57 = 57$$

The way you group the addends does not matter.

### The Additive Identity Property:

**Zero added to any number is the same as the original number.**

$$850 + 0 = 850$$

## Complete each number sentence. Write the name of the addition property you used.

$32 + 67 = \square + 32$

.....

$540 + 0 = \square$

.....

$(15 + 7) + 23 = 15 + \square$

.....

$(27 + 18) + 13 = 27 + \square$

.....

## Use the Associative Property to help you find each sum mentally.

$93 + 25 + 25 =$ .....

$422 + 345 + 78 =$ .....

$151 + 62 + 49 =$ .....




THINK

On Tuesday Jack picked 26 apples off a tree. On Wednesday, he picked 15 apples off the tree. On Thursday, he picked the remaining 9 apples off the tree.
How many apples were on the tree originally?

SHOW YOUR WORK

Lesson 2

# Estimating Sums and Differences

750 + 238=

750 rounds to 800

238 rounds to 200

$$\begin{array}{r} 800 \\ +\ 200 \\ \hline 1{,}000 \end{array}$$

750 + 238 is about 1,000

## Round each number to the nearest hundred, then estimate.

620 − 250= .....

833 + 121= .....

941 − 502= .....

$$\begin{array}{r} 5{,}264 \\ +\ 2{,}613 \\ \hline \end{array}$$

$$\begin{array}{r} 3{,}449 \\ +\ 5{,}287 \\ \hline \end{array}$$

## Round each number to the nearest ten, then estimate the sum or difference.

$$\begin{array}{r} 5{,}328 \\ -\ 784 \\ \hline \end{array}$$

$$\begin{array}{r} 942 \\ +\ 368 \\ \hline \end{array}$$

$$\begin{array}{r} 61{,}358 \\ +\ 9{,}513 \\ \hline \end{array}$$

THINK

Nasser listened to three CDs. The first was 62 minutes long. The second was 48 minutes long. The third was 75 minutes long. About how many total minutes of music did Nasser listen to? (Round your answer to the nearest ten).

SHOW YOUR WORK

Lesson 3

# Adding Whole Numbers

Add.

2,874 + 957 =

```
  1 1 1
  2,874
+   957
-------
  3,831
```

Remember to regroup to the next digit if the sum of the digits in a place value is 10 or greater.

Check by estimating.

2,847 ⇒ 3,000

+ 857 ⇒ +1,000

4,000

3,831 is close to 4,000. The answer is reasonable.

**Find each sum, then check by estimating and write if your answer is reasonable or unreasonable.**

5,108 + 4,843 = _____ + _____ = _____

1,753 + 4,637 = _____ + _____ = _____

3,842 + 3,584 = _____ + _____ = _____

2,884 + 4,067 = _____ + _____ = _____

5,523 + 182 = _____ + _____ = _____

7,366 + 3,309 = _____ + _____ = _____

425 + 123 + 662 = _____ = _____

5,320 + 5,641 + 9,635 = _____ = _____

325 + 901 + 411 = _____ = _____

THINK

The book "Alice's Adventures" sold about 651 copies on Friday, 313 on Saturday, and 225 on Monday. What was the total quantity sold over three days?

SHOW YOUR WORK

Lesson 4

# Subtracting Whole Numbers

$$3,675 - 879 =$$

$$\begin{array}{r} {\scriptstyle 2\ \ 15\ 16} \\ 3,\not{6}\not{7}\not{5} \\ -\ \ 879 \\ \hline 2,796 \end{array}$$

If necessary, regroup before you subtract.

Check by adding.

$$\begin{array}{r} 2,796 \\ +\ \ 879 \\ \hline 3,675 \end{array}$$

## Find the difference. Check by adding.

$$\begin{array}{r} 5,378 \\ -\ \ 848 \\ \hline \end{array} \quad + \_\_\_\_\_$$

$$\begin{array}{r} 7,235 \\ -\ \ 953 \\ \hline \end{array} \quad + \_\_\_\_\_$$

$$\begin{array}{r} 8,135 \\ -\ \ 846 \\ \hline \end{array} \quad + \_\_\_\_\_$$

$$\begin{array}{r} 91,323 \\ -\ 82,418 \\ \hline \end{array} \quad + \_\_\_\_\_$$

$$\begin{array}{r} 9,354 \\ -\ 7,889 \\ \hline \end{array} \quad + \_\_\_\_\_$$

$8,855 - 4,457 =$

_____ + _____ = _____

$9,111 - 5,487 =$

_____ + _____ = _____

## Find each missing number.

$\square + 5,495 = 17,883$

$1,398 - \square = 817$

THINK

A concert hall seats 2,101 people. If 1,850 people attended last night's concert, how many seats were empty?

SHOW YOUR WORK

# 03 Multiplication Properties

Lesson 1

## Multiplication Properties

### The Commutative Property:

When two numbers are multiplied together, the product is the same regardless of the order of the factors.

$$7 \times 5 = 5 \times 7$$
$$(35) = (35)$$

### The Associative Property:

When three or more numbers are multiplied, the product is the same regardless of the order of the factors.

$$(2 \times 3) \times 4 = 2 \times (3 \times 4)$$
$$6 \times 4 = 2 \times 12$$
$$(24) = (24)$$

### The Distributive Property:

The product of a number multiplied by another number equals the sum of the products of the first number multiplied by each of the addends of the second number.

$$6 \times 15 = 6(10 + 5)$$
$$(6 \times 10) + (6 \times 5)$$
$$60 + 30 = 90$$

### The Multiplicative Identity Property:

The product of any number multiplied by one is the same as the original number.

$$1 \times 9 = 9$$
$$230 \times 1 = 230$$

### The Multiplication Property of Zero:

The product of any number multiplied by zero is zero.

$$15 \times 0 = 0$$
$$1{,}280 \times 0 = 0$$

Fill in the missing numbers. Name the multiplication properties you used when solving.

$1 \times 8 = \square$ ..... $9 \times 5 = 5 \times (\square + 5) =$ .....

$(2 \times 4) \times 5 = 2 \times (\square \times 5) =$ ..... $0 \times 72 = \square$ .....

$6 \times \square \times 5 = 5 \times 6 \times 3 =$ $(7 \times 3) \times 4 = 7 \times (3 \times \square) =$

..... .....

# Relationships Between Multiplication and Division

$4 \times 7 = 28$

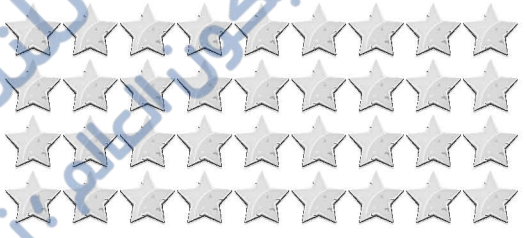
$7 \times 4 = 28$

$28 \div 7 = 4$

$28 \div 4 = 7$

## Write the fact family for each set.

3 5 15



3 × 5 = 15

5 × 3 = 15

15 ÷ 3 = 5

15 ÷ 5 = 3