ISEE UPPER LEVEL Mathematics Workbook 2018 - 2019

A Comprehensive Review and Step-by-Step Guide to Preparing for the ISEE UPPER LEVEL Math Test

Reza Nazari & Ava Ross

Let's Keep in Touch

Follow Us Online

Visit US at

www.EffortlessMath.com

https://www.facebook.com/Effortlessmath

https://goo.gl/2B6qWW

Online Math Lessons

It's easy! Here's how it works.

1- Request a FREE introductory session.

2- Meet a Math tutor online.

3- Start Learning Math in Minutes.

Send Email to: info@EffortlessMath.com

www.EffortlessMath.com

… So Much More Online!

- **FREE Math lessons**
- **More Math learning books!**
- **Online Math Tutors**

Looking for an Online Math Tutor?

Send Email to: info@EffortlessMath.com

ISEE Upper Level Mathematics Workbook 2018 - 2019

A Comprehensive Review and Step-by-Step Guide to Preparing for the ISEE Upper Level Math

By

Reza Nazari & Ava Ross

Copyright © 2018

Reza Nazari & Ava Ross

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section 107 or 108 of the 1976 United States Copyright Ac, without permission of the author.

All inquiries should be addressed to:

info@effortlessMath.com

www.EffortlessMath.com

ISBN-13: 978-1719270410

ISBN-10: 1719270414

Published by: Effortless Math Education

www.EffortlessMath.com

Description

Effortless Math ISEE UPPER LEVEL Workbook 2018-2019 provides students with the confidence and math skills they need to succeed on the ISEE UPPER LEVEL Math, providing a solid foundation of basic Math topics with abundant exercises for each topic. It is designed to address the needs of ISEE UPPER LEVEL test takers who must have a working knowledge of basic Math.

This comprehensive workbook with over 2,500 sample questions and 2 complete ISEE UPPER LEVEL tests is all you need to fully prepare for the ISEE UPPER LEVEL Math. It will help you learn everything you need to ace the math section of the ISEE UPPER LEVEL.

There are more than 2,500 Math problems with answers in this book.

Effortless Math unique study program provides you with an in-depth focus on the math portion of the exam, helping you master the math skills that students find the most troublesome.

This workbook contains most common sample questions that are most likely to appear in the mathematics section of the ISEE UPPER LEVEL.

Inside the pages of this comprehensive Workbook, students can learn basic math operations in a structured manner with a complete study program to help them understand essential math skills. It also has many exciting features, including:

- Dynamic design and easy-to-follow activities
- A fun, interactive and concrete learning process
- Targeted, skill-building practices
- Fun exercises that build confidence
- Math topics are grouped by category, so you can focus on the topics you struggle on
- All solutions for the exercises are included, so you will always find the answers
- 2 Complete ISEE UPPER LEVEL Math Practice Tests that reflect the format and question types on ISEE UPPER LEVEL

Effortless Math ISEE UPPER LEVEL Workbook is an incredibly useful tool for those who want to review all topics being covered on the ISEE UPPER LEVEL test. It efficiently and effectively reinforces learning outcomes through engaging questions and repeated practice, helping you to quickly master basic Math skills.



About the Author

Reza Nazari is the author of more than 100 Math learning books including:
– Math and Critical Thinking Challenges: For the Middle and High School Student
– ISEE UPPER LEVEL Math in 30 Days.
– ASVAB Math Workbook 2018 – 2019
– Effortless Math Education Workbooks
– and many more Mathematics books …

Reza is also an experienced Math instructor and a test–prep expert who has been tutoring students since 2008. Reza is the founder of Effortless Math Education, a tutoring company that has helped many students raise their standardized test scores—and attend the colleges of their dreams. Reza provides an individualized custom learning plan and the personalized attention that makes a difference in how students view math.

To ask questions about Math, you can contact Reza via email at:
reza@EffortlessMath.com

Find Reza's professional profile at:
goo.gl/zoC9rJ

Contents

CHAPTER 1: Whole Numbers 11
Place Value 12
Rounding 13
Whole Number Addition and Subtraction 14
Whole Number Multiplication and Division 15
Rounding and Estimates 16
Comparing Numbers 17
Answers of Worksheets – CHAPTER 1 18
CHAPTER 2: Fractions and Decimals 20
Simplifying Fractions 21
Adding and Subtracting Fractions 22
Multiplying and Dividing Fractions 23
Adding Mixed Numbers 24
Subtract Mixed Numbers 25
Multiplying Mixed Numbers 26
Dividing Mixed Numbers 27
Comparing Decimals 28
Rounding Decimals 29
Adding and Subtracting Decimals 30
Multiplying and Dividing Decimals 31
Converting Between Fractions, Decimals and Mixed Numbers 32
Factoring Numbers 33
Greatest Common Factor 34
Least Common Multiple 35
Divisibility Rules 36
Answers of Worksheets – CHAPTER 2 37
Chapter 3: Real Numbers and Integers 43
Adding and Subtracting Integers 44
Multiplying and Dividing Integers 45
Ordering Integers and Numbers 46
Arrange, Order, and Comparing Integers 47

Order of Operations 48
Mixed Integer Computations 49
Integers and Absolute Value 50
Answers of Worksheets – CHAPTER 3 51
Chapter 4: Proportions and Ratios 54
Writing Ratios 55
Simplifying Ratios 56
Create a Proportion 57
Similar Figures 58
Simple Interest 59
Ratio and Rates Word Problems 60
Answers of Worksheets – Chapter 4 61
Chapter 5: Percent 63
Percentage Calculations 64
Converting Between Percent, Fractions, and Decimals 65
Percent Problems 66
Markup, Discount, and Tax 67
Answers of Worksheets – Chapter 5 68
Chapter 6: Algebraic Expressions 70
Expressions and Variables 71
Simplifying Variable Expressions 72
Simplifying Polynomial Expressions 73
Translate Phrases into an Algebraic Statement 74
The Distributive Property 75
Evaluating One Variable 76
Evaluating Two Variables 77
Combining like Terms 78
Answers of Worksheets – Chapter 6 79
Chapter 7: Equations 81
One–Step Equations 82
Two–Step Equations 83
Multi–Step Equations 84

Answers of Worksheets – Chapter 7 85
Chapter 8: Inequalities 86
Graphing Single–Variable Inequalities 87
One–Step Inequalities 88
Two–Step Inequalities 89
Multi–Step Inequalities 90
Answers of Worksheets – Chapter 8 91
Chapter 9: Linear Functions 93
Finding Slope 94
Graphing Lines Using Slope–Intercept Form 95
Graphing Lines Using Standard Form 96
Writing Linear Equations 97
Graphing Linear Inequalities 98
Finding Midpoint 99
Finding Distance of Two Points 100
Answers of Worksheets – Chapter 9 101
Chapter 10: Polynomials 105
Classifying Polynomials 106
Writing Polynomials in Standard Form 107
Simplifying Polynomials 108
Adding and Subtracting Polynomials 109
Multiplying Monomials 110
Multiplying and Dividing Monomials 111
Multiplying a Polynomial and a Monomial 112
Multiplying Binomials 113
Factoring Trinomials 114
Operations with Polynomials 115
Answers of Worksheets – Chapter 10 116
Chapter 11: Systems of Equations 120
Solving Systems of Equations by Substitution 121
Solving Systems of Equations by Elimination 122
Systems of Equations Word Problems 123

Answers of Worksheets – Chapter 11 124
Chapter 12: Exponents and Radicals 125
Multiplication Property of Exponents 126
Division Property of Exponents 127
Powers of Products and Quotients 128
Zero and Negative Exponents 129
Negative Exponents and Negative Bases 130
Writing Scientific Notation 131
Square Roots 132
Answers of Worksheets – Chapter 12 133
Chapter 13: Statistics 136
Mean, Median, Mode, and Range of the Given Data 137
Box and Whisker Plots 138
Bar Graph 139
Stem–And–Leaf Plot 140
The Pie Graph or Circle Graph 141
Scatter Plots 142
Probability Problems 143
Answers of Worksheets – Chapter 13 144
Chapter 14: Geometry 147
The Pythagorean Theorem 148
Area of Triangles 149
Perimeter of Polygons 150
Area and Circumference of Circles 151
Area of Squares, Rectangles, and Parallelograms 152
Area of Trapezoids 153
Answers of Worksheets – Chapter 14 154
Chapter 15: Solid Figures 155
Volume of Cubes 156
Volume of Rectangle Prisms 157
Surface Area of Cubes 158
Surface Area of a Rectangle Prism 159

Volume of a Cylinder.....160
Surface Area of a Cylinder.....161
Answers of Worksheets – Chapter 15.....162
Time to Test 163
ISEE UPPER LEVEL Mathematics Practice.....164
ISEE Upper Level Practice Test Answers 181
A Realistic ISEE UPPER LEVEL Math Test.....182
ISEE UPPER LEVEL Mathematics Practice.....183
ISEE Upper Level Practice Test Answers 199

CHAPTER 1: Whole Numbers

Math Topics that you'll learn today:

- ✓ Place Value
- ✓ Rounding
- ✓ Whole Number Addition and Subtraction
- ✓ Whole Number Multiplication and Division
- ✓ Rounding and Estimates
- ✓ Comparing Numbers

"If people do not believe that mathematics is simple, it is only because they do not realize how complicated life is." — John von Neumann

Place Value

Helpful Hints

The value of the place, or position, of a digit in a number.

For the number 3,684.26

Decimal Place Value Chart

Millions	Hundred thousands	Ten thousands	Thousands	Hundreds	Tens	Ones	Decimal point	Tenths	Hundredths	Thousandths	Ten-thousandths	Hundred thousandths	Millionths
			3	6	8	4	.	2	6				

Example:

In 456, the 5 is in "tens" position.

✍ *Write each number in expanded form.*

1) Thirty–five 30 + 5

2) Sixty–seven ___ + ___

3) Forty–two ___ + ___

4) Eighty–nine ___ + ___

5) Ninety–one ___ + ___

✍ *Circle the correct one.*

6) The 2 in 72 is in the ones place tens place hundreds place

7) The 6 in 65 is in the ones place tens place hundreds place

8) The 2 in 342 is in the ones place tens place hundreds place

9) The 5 in 450 is in the ones place tens place hundreds place

10) The 3 in 321 is in the ones place tens place hundreds place

Rounding

Helpful Hints

– Rounding is putting a number up or down to the nearest whole number or the nearest hundred, etc.

Example:

64 rounded to the nearest ten is 60, because 64 is closer to 60 than to 70.

Round each number to the underlined place value.

1) 9̲72
2) 2,9̲95
3) 3̲64
4) 8̲1
5) 5̲5
6) 3̲34
7) 1,2̲03
8) 9.5̲7
9) 7.4̲84
10) 9.1̲4
11) 3̲9
12) 9̲,123
13) 3,45̲2
14) 5̲69
15) 1,2̲30
16) 9̲8
17) 9̲3
18) 3̲7
19) 49̲3
20) 2,9̲23
21) 9̲,845
22) 55̲5
23) 9̲39
24) 6̲9

Whole Number Addition and Subtraction

Helpful Hints		Example:
	1– Line up the numbers.	
	2– Start with the unit place. (ones place)	231 + 120 = 351
	3– Regroup if necessary.	292 – 90 = 202
	4– Add or subtract the tens place.	
	5– Continue with other digits.	

Solve.

1) A school had 891 students last year. If all last year students and 338 new students have registered for this year, how many students will there be in total?

2) Alice has just started her first job after graduating from college. Her yearly income is $33,000 per year. Alice's father income is $56,000 per year and her mother's income is $49,000. What is yearly income of Alice and her parent altogether?

3) Tom had $895 dollars in his saving account. He gave $235 dollars to his sister, Lisa. How much money does he have left?

4) Emily has 830 marbles, Daniel has 970 marbles, and Ethan has 230 marbles less than Daniel. How many marbles do they have in all?

Find the missing number.

5) 890 – ..... = 300

6) 1000 – ..... = 200

7) ..... – 4000 = 92000

8) 60000 – 51000 = ...

9) 3400 – ..... = 3200

10) 33000 – 5000 = ...

Whole Number Multiplication and Division

Helpful Hints

Multiplication:

– Learn the times tables first!

– For multiplication, line up the numbers you are multiplying.

– Start with the ones place.

– Continue with other digits

– A typical division problem:

Dividend ÷ Divisor = Quotient

Division:

– In division, we want to find how many times a number (divisor) is contained in another number (dividend).

– The result in a division problem is the quotient.

Example:

200 × 90 = 18,000

18,000 ÷ 90 = 200

Multiply and divided.

1) 340 ÷ 8 =
2) 1800 ÷ 20 =
3) 50000 ÷ 10 =
4) 966 ÷ 30 =
5) 201 × 20 =
6) 400 × 50 =
7) 400 × 90 =
8) 888 × 90 =
9) 80 × 80 =
10) 122 × 12 =
11) 609 × 8 =
12) 220 × 12 =

13) A group of 235 students has collected $8,565 for charity during last month. They decided to split the money evenly among 5 charities. How much will each charity receive?

14) Maria and her two brothers have 9 boxes of crayons. Each box contains 56 crayons. How many crayons do Maria and her two brothers have?

Rounding and Estimates

Helpful Hints

– Rounding and estimating are math strategies used for approximating a number.

– To estimate means to make a rough guess or calculation.

– To round means to simplify a known number by scaling it slightly up or down.

Example:

$73 + 69 \approx 140$

Estimate the sum by rounding each added to the nearest ten.

1) 55 + 9
2) 25 + 12
3) 83 + 7
4) 32 + 37
5) 13 + 74
6) 34 + 11
7) 39 + 77
8) 25 + 4
9) 61 + 73
10) 64 + 59
11) 14 + 68
12) 82 + 12
13) 43 + 66
14) 45 + 65
15) 553 + 232
16) 418 + 846
17) 582 + 277
18) 2771 + 1651
19) 7436 + 3575
20) 1542 + 8738
21) 3843 + 6579
22) 4722 + 8186
23) 2419 + 7224
24) 6768 + 3169