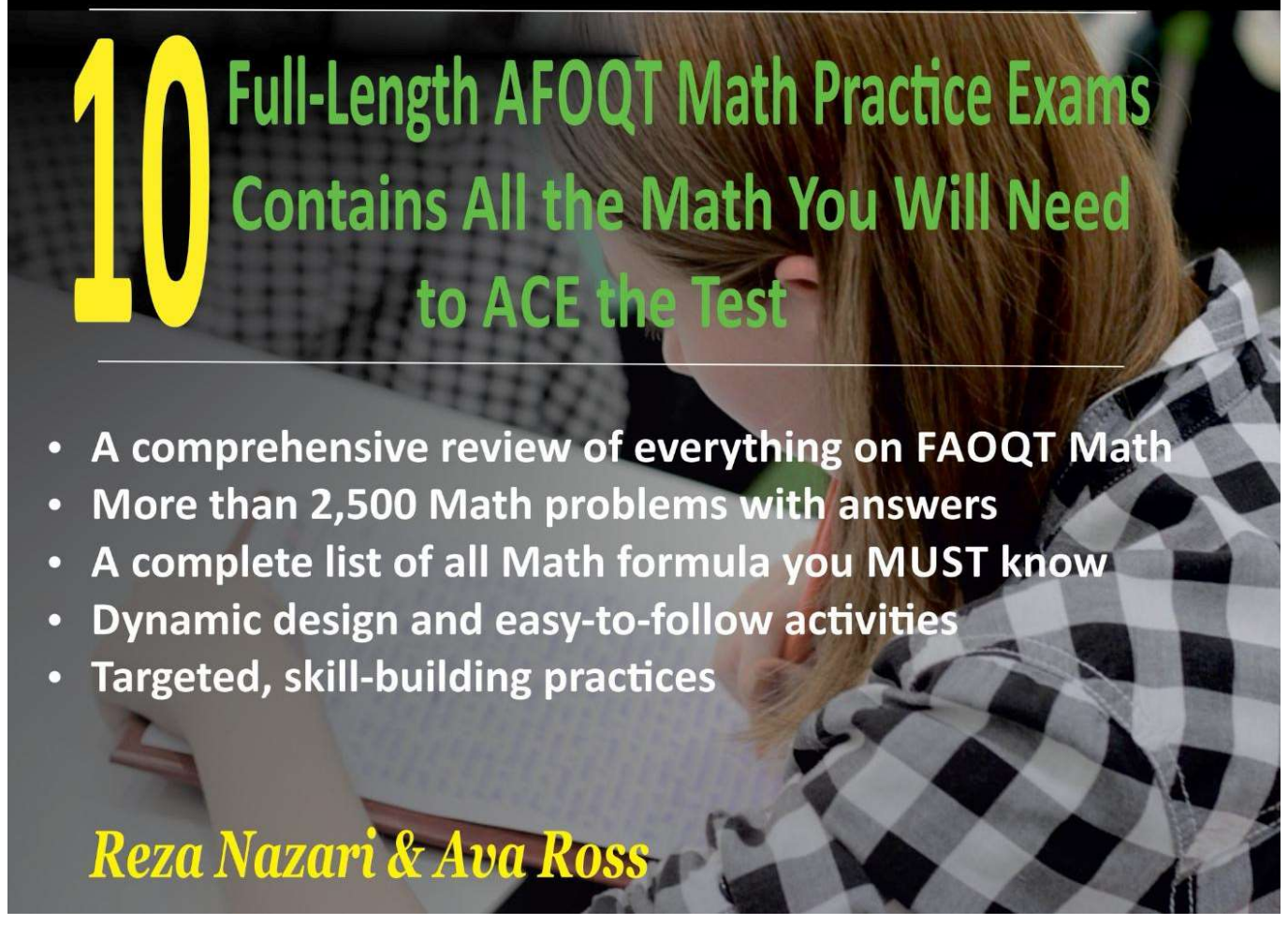
The Most Comprehensive Review for the Math Section of the AFOQT

AFOQT Math Workbook 2018

10 Full-Length AFOQT Math Practice Exams Contains All the Math You Will Need to ACE the Test



- A comprehensive review of everything on FAOQT Math
- More than 2,500 Math problems with answers
- A complete list of all Math formula you MUST know
- Dynamic design and easy-to-follow activities
- Targeted, skill-building practices

Reza Nazari & Ava Ross

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By

Reza Nazari

& Ava Ross

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Description

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

This comprehensive workbook with over 2,500 Math questions and 10 complete Arithmetic and Mathematics Knowledge tests is all you need to fully prepare for the AFOQT Math test. It will help you learn everything you need to ace the math section of the AFOQT.

There are more than 2,500 AFOQT 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 AFOQT.

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

- 10 Complete AFOQT Math Practice Tests that reflect the format and question types on AFOQT

Effortless Math AFOQT Workbook is an incredibly useful tool for those who want to review all topics being covered on the AFOQT 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 50 Math learning books including:

- Math for Super Smart Students: Fifth Graders and Older by Reza Nazari

- Math and Critical Thinking Challenges: For the Middle and High School Student

- Effortless Math Education Workbooks

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.

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All Mathematics Formulas You Must Know!

Taking the AFOQT with only a few weeks or even few days to study? First and foremost, you should understand that the 2018 *AFOQT* Arithmetic and Mathematics Knowledge sections do *not provide a list of basic formulas that will be required to know for the test. This means that you will need to be able to recall many math formulas on the AFOQT.*

Below you will find a list of all Math formulas you MUST have learned before test day, as well as some explanations for how to use them and what they mean. Keep this list around for a quick reminder when you forget one of the formulas.

Review them all, then take a look at the math topics to begin applying them!

Mathematics Formula Sheet

Place Value

The value of the place, or position, of a digit in a number.
Example: In 456, the 5 is in "tens" position.

Comparing Numbers Signs

Equal to =
Less than <
Greater than >
Greater than or equal ≥
Less than or equal ≤

Rounding

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.

Whole Number

The numbers {0, 1, 2, 3, …}

Estimates

Find a number close to the exact answer.

Decimals

is a fraction written in a special form. For example, instead of writing $\frac{1}{2}$ you can write 0.5.

Fractions

A number expressed in the form $\frac{a}{b}$

Adding and Subtracting with the same denominator:

$$\frac{a}{b}+\frac{c}{b}=\frac{a+c}{b}$$

$$\frac{a}{b}-\frac{c}{b}=\frac{a-c}{b}$$

Adding and Subtracting with the different denominator:

$$\frac{a}{b}+\frac{c}{d}=\frac{ad+cb}{bd}$$

$$\frac{a}{b}-\frac{c}{d}=\frac{ad\quad cb}{bd}$$

Multiplying and Dividing Fractions:

$$\frac{a}{b}\times\frac{c}{d}=\frac{a\times c}{b\times \mathrm{d}}$$

$$\frac{a}{b}\div\frac{c}{d}=\frac{\frac{a}{b}}{\frac{c}{d}}=\frac{ad}{bc}$$

Mixed Numbers

A number composed of a whole number and fraction

Example: $2\frac{2}{3}$

Converting between improper fractions and mixed numbers:

$$\mathrm{a}\frac{c}{b}=\mathrm{a}+\frac{c}{b}=\frac{ab\quad c}{b}$$

Factoring Numbers

Factor a number means to break it up into numbers that can be multiplied together to get the original number.

Example: 12 = 2 × 2 × 3

Greatest Common Factor

Multiply common prime factors

Example: 200 = 2 × 2 × 2 × 5 × 5

60 = 2 × 2 × 3 × 5

GCF (200, 60) = 2 × 2 × 5 = 20

Integers

{… , −3, −2, −1, 0, 1, 2, 3, …}

Includes: zero, counting numbers, and the negative of the counting numbers

Order of Operations

PEMDAS

(parentheses / exponents / multiply / divide / add / subtract)

Ratios

A ratio is a comparison of two numbers by division.

Example: 3: 5, or $\frac{3}{5}$

Percentages

use the following formula to find part, whole, or percent

part = $\frac{\text{percent}}{100}$ × whole

Percent of Change

$$\frac{\text{New Value}-\text{Old Value}}{Old\ Value} \times 100\ \%$$

Markup

Markup = selling price – cost

Markup rate = markup divided by the cost

Divisibility Rules

Divisibility means that you are able to divide a number evenly.

Example: 24 is divisible by 6, because 24 ÷ 6 = 4

Least Common Multiple

Check multiples of the largest number

Example: LCM (200, 60): 200 (no), 400 (no), 600 (yes!)

Real Numbers

All numbers that are on number line. Integers plus fractions, decimals, and irrationals (√2, √3, π, etc.)

Absolute Value

Refers to the distance of a number from 0, the distances are positive as absolute value of a number cannot be negative. $|-22| = 22$

$$|x| = \begin{cases} x & for\ x \geq 0 \\ -x & for\ x < 0 \end{cases}$$

$|x| < n \quad \Rightarrow \quad -n < x < n$

$|x| > n \quad \Rightarrow \quad x < -n \text{ or } x > n$

Proportional Ratios

A proportion means that two ratios are equal. It can be written in two ways:

$\frac{a}{b} = \frac{c}{d}$, a: b = c: d

Discount

Multiply the regular price by the rate of discount

Selling price =

original price – discount

Expressions and Variables

A variable is a letter that represents unspecified numbers. One may use a variable in the same manner as all other numbers:

Addition	2 + a	2 plus a
Subtraction	y – 3	y minus 3
Division	$\frac{4}{x}$	4 divided by x
Multiplication	5a	5 times a

Systems of Equations

Two or more equations working together.

example:

$-2x + 2y = 4$

$-2x + y = 3$

Functions

A function is a rule to go from one number (x) to another number (y), usually written y = f (x).

For any given value of x, there can only be one corresponding value y. If y = kx for some number k (example: f (x) = 0.5 x), then y is said to be directly proportional to x. If y = k/x (example: f (x) = 5/x), then y is said to be inversely proportional to x.

The graph of y = f (x h) + k is the translation of the graph of y = f (x) by (h, k) units in the plane. For example, y = f (x + 3) shifts the graph of f (x) by 3 units to the left.

Tax

To find tax, multiply the tax rate to the taxable amount (income, property value, etc.)

Distributive Property

a (b + c) = ab + ac

Polynomial

$P(x) = a_0x^n + a_1x^{n-1} + \ldots + a_{n-2}2x^2 + a_{n-1}x + an$

Equations

The values of two mathematical expressions are equal.

ax + b = c

Solving Systems of Equations by Substitution

Consider the system of equations

x – y = 1, –2x + y = 6

Substitute x = 1 – y in the second equation

–2(1–y) + y = 5 y = 2

Substitute y = 2 in x = 1 + y

X = 1 + 2 = 3

Solving Systems of Equations by Elimination

$$\begin{array}{r} x + 2y = 6 \\ +\ -x + y = 3 \\ \hline 3y = 9 \\ y = 3 \end{array}$$

x + 6 = 6

x = 0