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SHSAT Math Study Guide 2020-2021

A Comprehensive Review and Step-By-Step Guide to Preparing for the SHSAT Math

Recommended by Test Prep Experts



Reza Nazari & Ava Ross

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A Comprehensive Review and Step-By-Step Guide to Preparing for the SHSAT Math

By

Reza Nazari & Ava Ross

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Description

SHSAT Math Study Guide, which reflects the 2020 - 2021 test guidelines, is designed by top SHSAT Math instructors and test prep experts to help test takers succeed on the SHSAT Math Test. The updated version of this comprehensive SHSAT Math preparation book includes Math lessons, extensive exercises, sample SHSAT Math questions, and quizzes with answers and detailed solutions to help you hone your math skills, overcome your exam anxiety, boost your confidence—and do your best to ace the SHSAT exam on test day. Upon completion of this perfect SHSAT Math prep book, you will have a solid foundation and sufficient practice to ace the SHSAT Math test.

Not only does this all-inclusive prep book offer everything you will ever need to prepare for the SHSAT Math test, but it also contains two complete and realistic SHSAT Math tests that reflect the format and question types on the SHSAT to help you check your exam-readiness and identify where you need more practice.

SHSAT Math Study Guide contains many exciting and unique features to help you prepare for the SHSAT Math test, including:

- ✓ Content 100% aligned with the 2020 SHSAT® test
- ✓ Written by SHSAT Math instructors and test experts
- ✓ Complete coverage of all SHSAT Math concepts and topics which you will be tested
- ✓ Step-by-step guide for all SHSAT Math topics
- ✓ Abundant Math skill building exercises to help test-takers approach different question types that might be unfamiliar to them
- ✓ Exercises on different SHSAT Math topics such as integers, percent, equations, polynomials, exponents and radicals
- ✓ 2 full-length practice tests (featuring new question types) with detailed answers

SHSAT Math Study Guide

This SHSAT Math prep book and other Effortless Math Education books are used by thousands of students each year to help them review core content areas, brush-up in math, discover their strengths and weaknesses, and achieve their best scores on the SHSAT test.

Contents

Description 1
Simplifying Fractions 6
Adding and Subtracting Fractions 8
Multiplying and Dividing Fractions 10
Adding Mixed Numbers 12
Subtracting Mixed Numbers 14
Multiplying Mixed Numbers 16
Dividing Mixed Numbers 18
Comparing Decimals 20
Rounding Decimals 22
Adding and Subtracting Decimals 24
Multiplying and Dividing Decimals 26
Adding and Subtracting Integers 28
Multiplying and Dividing Integers 30
Order of Operation 32
Integers and Absolute Value 34
Simplifying Ratios 36
Proportional Ratios 38
Create Proportion 40
Similarity and Ratios 42
Percent Problems 44
Percent of Increase and Decrease 46
Discount, Tax and Tip 48
Simple Interest 50
Simplifying Variable Expressions 52
Simplifying Polynomial Expressions 54
Evaluating One Variable 56
Evaluating Two Variables 58
The Distributive Property 60
One–Step Equations 62
Multi –Step Equations 64

System of Equations 66
Graphing Single–Variable Inequalities 68
One–Step Inequalities 70
Multi –Step Inequalities 72
Finding Slope 74
Graphing Lines Using Slope–Intercept Form 76
Writing Linear Equations 78
Finding Midpoint 80
Finding Distance of Two Points 82
Multiplication Property of Exponents 84
Division Property of Exponents 86
Powers of Products and Quotients 88
Zero and Negative Exponents 90
Negative Exponents and Negative Bases 92
Scientific Notation 94
Radicals 96
Simplifying Polynomials 98
Adding and Subtracting Polynomials 100
Multiplying Binomials 102
Multiplying and Dividing Monomials 104
Multiplying a Polynomial and a Monomial 106
Multiplying Monomials 108
Factoring Trinomials 110
The Pythagorean Theorem 112
The Pythagorean Theorem 114
The Pythagorean Theorem 116
Circles 118
The Pythagorean Theorem 120
The Pythagorean Theorem 122
Rectangular Prisms 124
Cylinder 126
Mean, Median, Mode, and Range of the Given Data 128

Name: ……..	**Date:** ……

Topic	**Percent of Increase and Decrease**
Notes	✓ Percent of change (increase or decrease) is a mathematical concept that represents the degree of change over time. ✓ To find the percentage of increase or decrease: 1- New Number – Original Number 2- The result ÷ Original Number × 100 Or use this formula: Percent of change = $\frac{new\ number - original\ number}{original\ number} \times 100$
Example	The price of a printer increases from $\$40$ to $\$50$. What is the percent increase? **Solution:** Percent of change = $\frac{new\ number - original\ number}{original\ numbe} \times 100 = \frac{50-40}{40} \times 100 = 25$ The percentage increase is 25. It means that the price of the printer increased 25%.
Your Turn!	1) In a class, the number of students has been increased from 32 to 36. What is the percentage increase? _____ %
	2) The price of gasoline rose from $\$4.50$ to $\$5.40$ in one month. By what percent did the gas price rise? _____ %
	3) A shirt was originally priced at $\$65.00$. It went on sale for $\$52.00$. What was the percent that the shirt was discounted? _____ %
	4) Jason got a raise, and his hourly wage increased from $\$40$ to $\$52$. What is the percent increase? _____ %

Name: ……	**Date:** ……

Topic	**Percent of Increase and Decrease - Answers**
Notes	✓ Percent of change (increase or decrease) is a mathematical concept that represents the degree of change over time. ✓ To find the percentage of increase or decrease: 1- New Number – Original Number 2- The result ÷ Original Number × 100 Or use this formula: Percent of change = $\frac{new\ number - original\ number}{original\ number} \times 100$
Example	The price of a printer increases from $\$40$ to $\$50$. What is the percent increase? **Solution:** Percent of change = $\frac{new\ number - original\ numb}{original\ number} \times 100 = \frac{50-40}{40} \times 100 = 25$ The percentage increase is 25. It means that the price of the printer increased 25%.
Your Turn!	1) In a class, the number of students has been increased from 32 to36. What is the percentage increase? 12.5%
	2) The price of gasoline rose from $\$4.50$ to $\$5.40$ in one month. By what percent did the gas price rise? 20%
	3) A shirt was originally priced at $\$65.00$. It went on sale for $\$52.00$. What was the percent that the shirt was discounted? 20%
	4) Jason got a raise, and his hourly wage increased from $\$40$ to $\$52$. What is the percent increase? 30%

Name: ……	**Date**: ……

Topic	**Discount, Tax and Tip**	
Notes	✓ Discount = Multiply the regular price by the rate of discount ✓ Selling price = original price – discount ✓ To find tax, multiply the tax rate to the taxable amount (income, property value, etc.) ✓ To find tip, multiply the rate to the selling price.	
Example	The original price of a table is $300 and the tax rate is 6%. What is the final price of the table? **Solution:** First find the tax amount. To find tax: Multiply the tax rate to the taxable amount. Tax rate is 6% or 0.06. Then: $0.06 \times 300 = 18$. The tax amount is $18. Final price is: $\$300 + \$18 = \$318$	
Your Turn!	1) Original price of a chair: $300 Tax: 15%, Selling price: _____	2) Original price of a computer: $750 Discount: 20%, Selling price: _____
	3) Original price of a printer: $250 Tax: 10%, Selling price: _____	4) Original price of a sofa: $620 Discount: 25%, Selling price: _____
	5) Original price of a mattress: $800 Tax: 12%, Selling price: _____	6) Original price of a book: $150 Discount: 60%, Selling price: _____
	7) Restaurant bill: $35.00 Tip: 20%, Final amount: _____	8) Restaurant bill: $60.00 Tip: 25%, Final amount: _____

Name: ……	**Date:** ……

Topic	**Discount, Tax and Tip - Answers**	
Notes	✓ Discount = Multiply the regular price by the rate of discount ✓ Selling price = original price – discount ✓ To find tax, multiply the tax rate to the taxable amount (income, property value, etc.) ✓ To find tip, multiply the rate to the selling price.	
Example	***The original price of a table is $300 and the tax rate is 6%. What is the final price of the table?*** **Solution:** First find the tax amount. To find tax: Multiply the tax rate to the taxable amount. Tax rate is 6% or 0.06. Then: $0.06 \times 300 = 18$. The tax amount is $18. Final price is: $\$300 + \$18 = \$318$	
Your Turn!	1) Original price of a chair: $300 Tax: 15%, Selling price: $345	2) Original price of a computer: $750 Discount: 20%, Selling price: $600
	3) Original price of a printer: $250 Tax: 10%, Selling price: $275	4) Original price of a sofa: $620 Discount: 25%, Selling price: $465
	5) Original price of a mattress: $800 Tax: 12%, Selling price: $896	6) Original price of a book: $150 Discount: 60%, Selling price: $60
	7) Restaurant bill: $35.00 Tip: 20%, Final amount: $42	8) Restaurant bill: $60.00 Tip: 25%, Final amount: $75

Name: ……..	**Date:** ……..

Topic	**Simple Interest**	
Notes	✓ Simple Interest: The charge for borrowing money or the return for lending it. To solve a simple interest problem, use this formula: Interest = principal x rate x time ⇒ $\boldsymbol{I = p \times r \times t}$	
Example	***Find simple interest for*** $\$3,000$ ***investment at*** 5% ***for*** 4 ***years*.** **Solution:** Use Interest formula: $I = prt$ ($P = \$3{,}000$, r $= 5\% = 0.05$ and $t = 4$) Then: $I = 3{,}000 \times 0.05 \times 4 = \$600$	
Your Turn!	1) $250 at 4% for 3 years. Simple interest: $_____	2) $3,300 at 5% for 6 years. Simple interest: $_____
	3) $720 at 2% for 5 years. Simple interest: $_____	4) $2,200 at 8% for 4 years. Simple interest: $_____
	5) $1,800 at 3% for 2 years. Simple interest: $_____	6) $530 at 4% for 5 years. Simple interest: $_____
	7) $7,000 at 5% for 3 months. Simple interest: $_____	8) $880 at 5% for 9 months. Simple interest: $_____

Name: ……	**Date:** ……

Topic	**Simple Interest - Answers**	
Notes	✓ Simple Interest: The charge for borrowing money or the return for lending it. To solve a simple interest problem, use this formula: Interest = principal x rate x time ⇒ $\boldsymbol{I = p \times r \times t}$	
Example	***Find simple interest for*** $\$3,000$ ***investment at*** 5% ***for*** 4 ***years***. **Solution:** Use Interest formula: $I = prt$ ($P = \$3{,}000$, r $= 5\% = 0.05$ and $t = 4$) Then: $I = 3{,}000 \times 0.05 \times 4 = \$600$	
Your Turn!	1) $250 at 4% for 3 years. Simple interest: $30	2) $3,300 at 5% for 6 years. Simple interest: $990
	3) $720 at 2% for 5 years. Simple interest: $72	4) $2,200 at 8% for 4 years. Simple interest: $704
	5) $1,800 at 3% for 2 years. Simple interest: $108	6) $530 at 4% for 5 years. Simple interest: $106
	7) $7,000 at 5% for 3 months. Simple interest: $87.50	8) $880 at 5% for 9 months. Simple interest: $33