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ISEE Upper Level Math Study Guide 2020-2021

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

Recommended by Test Prep Experts



Reza Nazari & Ava Ross

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By

Reza Nazari & Ava Ross

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All inquiries should be addressed to:

info@effortlessMath.com

www.EffortlessMath.com

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Description

ISEE Upper Level Math Study Guide, which reflects the 2020 - 2021 test guidelines, is designed by top ISEE Upper Level Math instructors and test prep experts to help test takers succeed on the ISEE Upper Level Math Test. The updated version of this comprehensive ISEE Upper Level Math preparation book includes Math lessons, extensive exercises, sample ISEE Upper Level 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 ISEE Upper Level exam on test day. Upon completion of this perfect ISEE Upper Level Math prep book, you will have a solid foundation and sufficient practice to ace the ISEE Upper Level Math test.

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

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

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

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 = $\frac{new\ number - original\ number}{original\ number} \times 100 = \frac{50-40}{40} \times 100 = 25$ 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 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 = $\frac{new\ number - original\ numb}{original\ number} \times 100$
Example	The price of a printer increases from $\$40$ to $\$50$. What is the percent increase? **Solution:** Percent of change = $\frac{new\ number - original\ number}{original\ num} \times 100 = \frac{50 -}{40} \times 100 = 25$ 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