LEAP Test Prep: 8th Grade Math Practice Workbook and Full-length Online Assessments

lumos learning
Developed by Expert Teachers

Grade 8

LOUISIANA Math

LEAP2025 Practice

Updated for 2021-22

tedBook
ONLINE

2 LEAP2025 Practice Tests

7 Question Types

30+ SKILLS

Louisiana Department of Education does not sponsor or endorse this product.

Important Instruction

Students, Parents, and Teachers can use the URL or QR code provided below to access two full-length Lumos LEAP practice tests. Please note that these assessments are provided in the Online format only.

URL

Visit the URL below and place the book access code

http://www.lumoslearning.com/a/tedbooks

Access Code: xxxxx-xxxxx

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Developed by Expert Teachers

INTRODUCTION

This book is specifically designed to improve student achievement on the Smarter Balanced Assessment Consortium (LEAP) Test. With over a decade of expertise in developing practice resources for standardized tests, Lumos Learning has designed the most efficient methodology to help students succeed on the state assessments (See Figure 1).

Lumos Smart Test Practice provides students LEAP assessment rehearsal along with an efficient pathway to overcome any standards proficiency gaps. Students perform at their best on standardized tests when they feel comfortable with the test content as well as the test format. Lumos online practice tests are meticulously designed to mirror the LEAP assessment. It adheres to the guidelines provided by the LEAP for the number of questions, standards, difficulty level, sessions, question types, and duration.

The process starts with students taking the online diagnostic assessment. This online diagnostic test will help assess students' proficiency levels in various standards.

After completion of the diagnostic assessment, students can take note of standards where they are not proficient. This step will help parents and educators in developing a targeted remedial study plan based on a student's proficiency gaps.

Once the targeted remedial study plan is in place, students can start practicing the lessons in this workbook that are focused on specific standards.

After the student completes the targeted remedial practice, the student should attempt the second online LEAP practice test. Record the proficiency levels in the second practice test to measure the student progress and identify any additional learning gaps. Further targeted practice can be planned to help students gain comprehensive skills mastery needed to ensure success on the state assessment.

Lumos Smart Test Prep Methodology

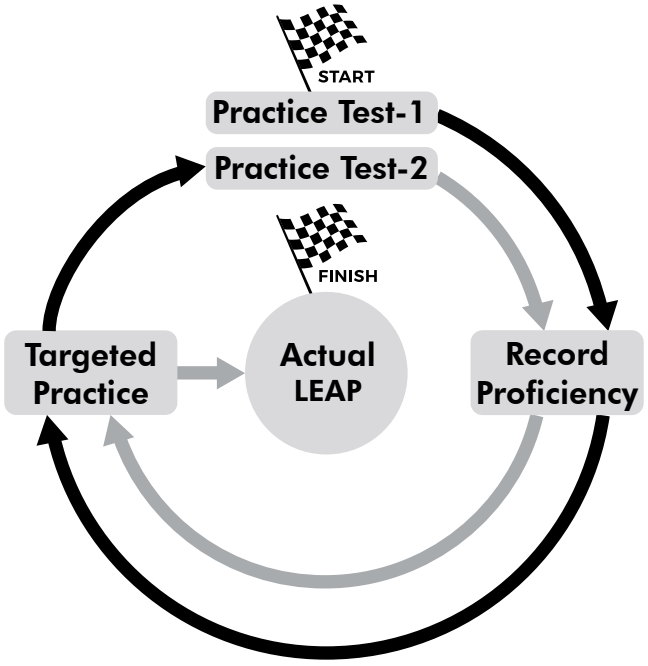


Figure 1

Table of Contents

Introduction			**1**
Chapter 1	**Lumos Smart Test Prep Methodology**		**6**
Chapter 2	**The Number System**		**10**
Lesson 1	8.NS.A.1	Rational vs. Irrational Numbers	10
Lesson 2	8.NS.A.2	Approximating Irrational Numbers	15
		Answer Key & Detailed Explanations	**20**
Chapter 3	**Expressions & Equations**		**26**
Lesson 1	8.EE.A.1	Properties of Exponents	26
Lesson 2	8.EE.A.2	Square & Cube Roots	30
Lesson 3	8.EE.A.3	Scientific Notations	34
Lesson 4	8.EE.A.4	Solving Problems Involving Scientific Notation	38
Lesson 5	8.EE.B.5	Compare Proportions	42
Lesson 6	8.EE.B.6	Understanding Slope	47
Lesson 7	8.EE.C.7.A	Solving Linear Equations	52
Lesson 8	8.EE.C.7.B	Solve Linear Equations with Rational Numbers	56
Lesson 9	8.EE.C.8.A	Solutions to Systems of Equations	61
Lesson 10	8.EE.C.8.B	Solving Systems of Equations	66
Lesson 11	8.EE.C.8.C	Systems of Equations in Real-World Problems	71
		Answer Key & Detailed Explanations	**76**
Chapter 4	**Functions**		**104**
Lesson 1	8.F.A.1	Functions	104
Lesson 2	8.F.A.2	Comparing Functions	110
Lesson 3	8.F.A.3	Linear Functions	116
Lesson 4	8.F.B.4	Linear Function Models	122
Lesson 5	8.F.B.5	Analyzing Functions	129
		Answer Key & Detailed Explanations	**136**

Chapter 5	**Geometry**		**148**
Lesson 1	8.G.A.1	Transformations of Points & Lines	148
Lesson 2	8.G.A.1.B	Transformations of Angles	153
Lesson 3	8.G.A.1.C	Transformations of Parallel Lines	162
Lesson 4	8.G.A.2	Transformations of Congruency	170
Lesson 5	8.G.A.3	Analyzing Transformations	175
Lesson 6	8.G.A.4	Transformations & Similarity	180
Lesson 7	8.G.A.5	Interior & Exterior Angles in Geometric Figures	185
Lesson 8	8.G.B.6	Verifying the Pythagorean Theorem	190
Lesson 9	8.G.B.7	Pythagorean Theorem in Real-World Problems	194
Lesson 10	8.G.B.8	Pythagorean Theorem & Coordinate System	201
Lesson 11	8.G.C.9	Finding Volume: Cone, Cylinder, & Sphere	205
		Answer Key & Detailed Explanations	**209**
Chapter 6	**Statistics & Probability**		232
Lesson 1	8.SP.A.1	Interpreting Data Tables & Scatter Plots	232
Lesson 2	8.SP.A.2	Scatter Plots, Line of Best Fit	240
Lesson 3	8.SP.A.3	Analyzing Linear Scatter Plots	248
Lesson 4	8.SP.A.4	Relatable Data Frequency	255
		Answer Key & Detailed Explanations	**262**
Additional Information			**272**
LEAP FAQ			272
What if I buy more than one Lumos Study Program?			275
Lumos StepUp® Mobile App FAQ for Students			276
Lumos StepUp® Mobile App FAQ for Parents and Teachers			277
Progress Chart			278

Chapter 1

Lumos Smart Test Prep Methodology

Step 1: Access Online LEAP Practice Test

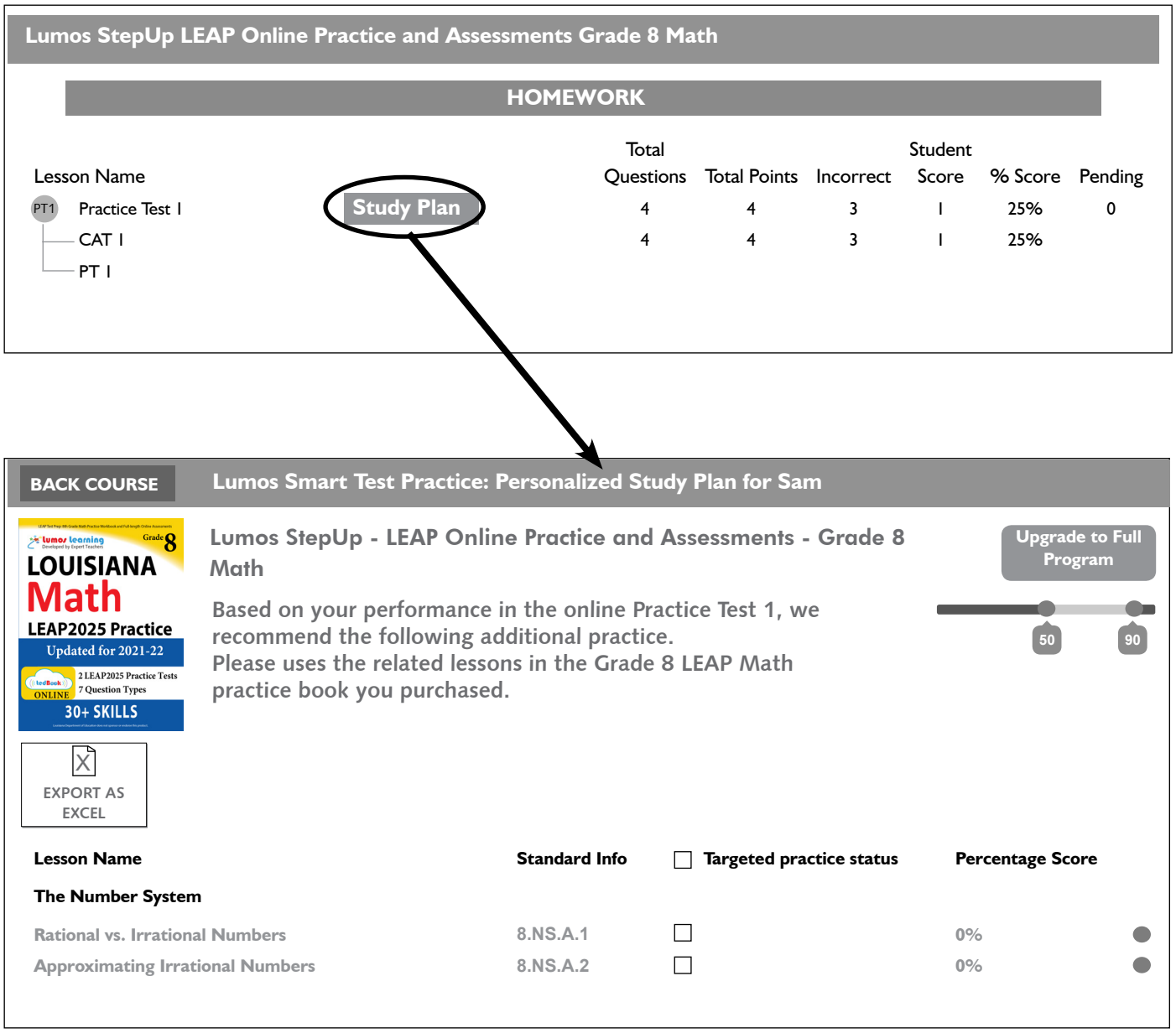
Use the URL and access code provided below or scan the QR code to access the first LEAP practice test to get started. The online LEAP practice test mirrors the actual Smarter Balanced assessments in number of questions, item types, test duration, test tools and more.

After completing the test, your student will receive immediate feedback with detailed reports on standards mastery. With this report, use the next section of the book to design a practice plan for your student.

URL
Visit the URL below and place the book access code **http://www.lumoslearning.com/a/tedbooks** **Access Code: xxxxx-xxxxx**

Step 2: Review the Personalized Study Plan Online

After student complete the online Practice Test 1, student can access their individualized study plan from the table of contents (Figure 2).
Parents and Teachers can also review the study plan through their Lumos account.



Step 3: Complete Targeted Practice

Using the information provided in the study plan report, complete the targeted practice using the appropriate lessons to overcome proficiency gaps. With lesson names included in the study plan, find the appropriate topics in this workbook and answer the questions provided. Students can refer to the answer key and detailed answers provided for each lesson to gain further understanding of the learning objective. Marking the completed lessons in the study plan after each practice session is recommended.(See Figure 3)

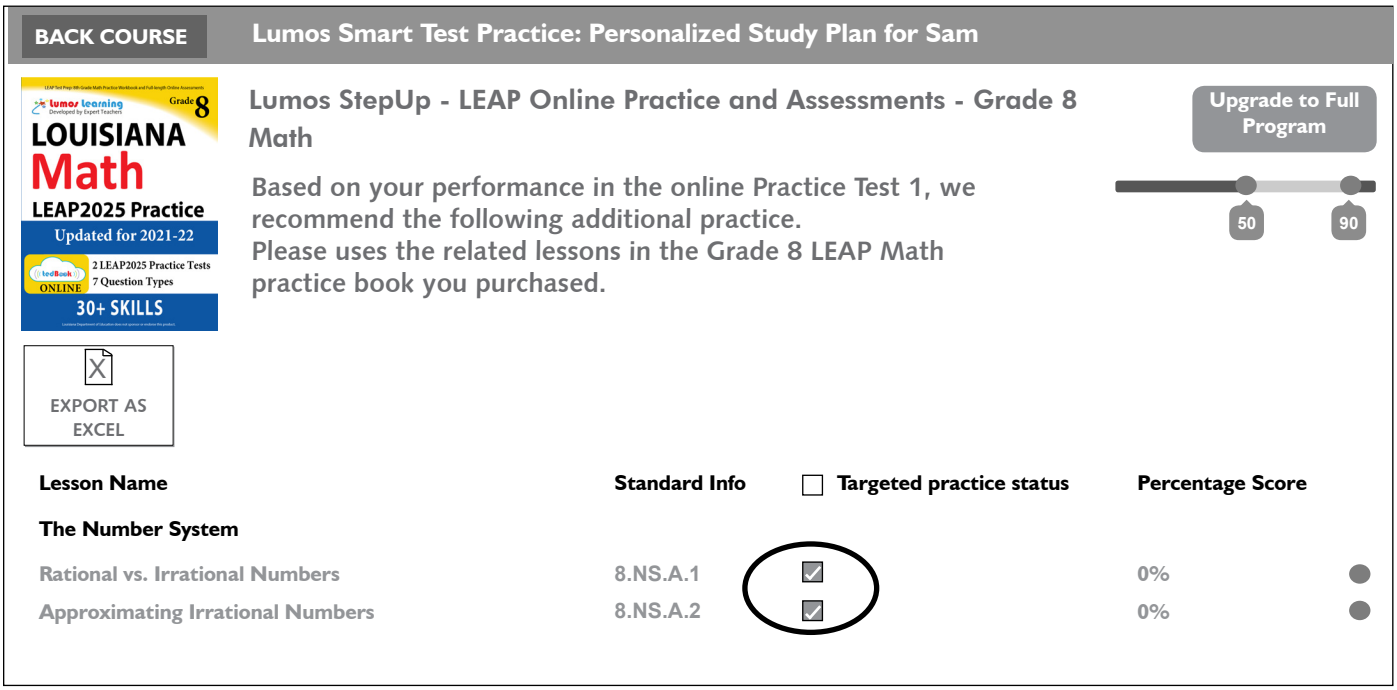


Figure 3

Step 4: Access the Practice Test 2 Online

After completing the targeted practice in this workbook, students should attempt the second LEAP practice test online. Using the student login name and password, login to the Lumos website to complete the second practice test.

Step 5: Repeat Targeted Practice

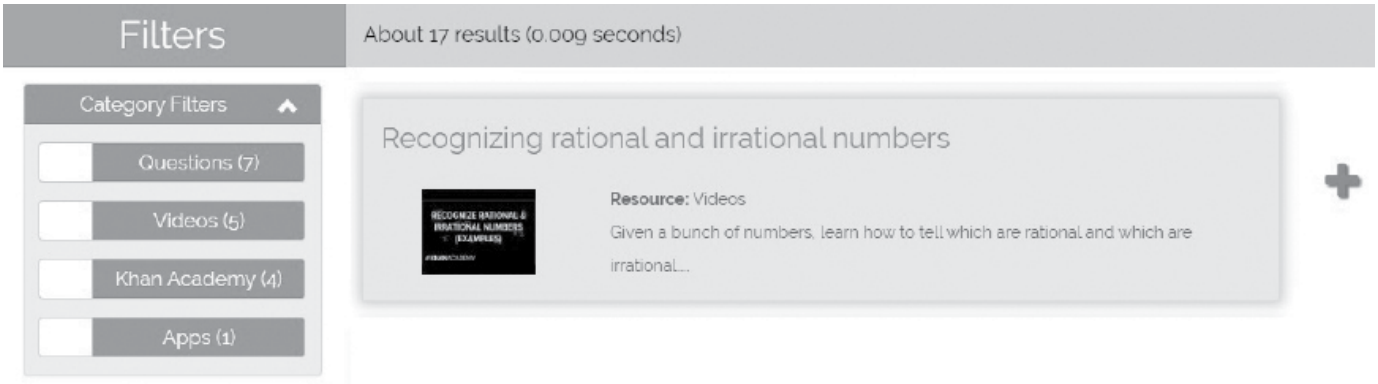
Repeat the targeted practice as per Step 3 using the second study plan report for Practice test 2 after completion of the second LEAP rehearsal.

Name: _____ Date: _____

Chapter 2:
The Number System

Lesson 1: Rational vs Irrational Numbers

You can scan the QR code given below or use the url to access additional EdSearch resources including videos and mobile apps related to *Rational vs Irrational Numbers*.



Rational vs Irrational Numbers

URL	QR Code
http://www.lumoslearning.com/a/8nsa1	

Name: _____ Date: _____

1. **Which of the following is an integer?**

   Ⓐ **-3**
   Ⓑ $\frac{1}{4}$
   Ⓒ **-12.5**
   Ⓓ **0.454545...**

2. **Which of the following statements is true?**

   Ⓐ **Every rational number is an integer.**
   Ⓑ **Every whole number is a rational number.**
   Ⓒ **Every irrational number is a natural number.**
   Ⓓ **Every rational number is a whole number.**

3. **Which of the following accurately describes the square root of 10?**

   Ⓐ **It is rational.**
   Ⓑ **It is irrational.**
   Ⓒ **It is an integer.**
   Ⓓ **It is a whole number.**

4. **Complete the following statement: Pi is _____ .**

   Ⓐ **both real and rational**
   Ⓑ **real but not rational**
   Ⓒ **rational but not real**
   Ⓓ **neither real nor rational**

5. **Complete the following statement: $\sqrt{7}$ is _____.**

   Ⓐ **both a real and a rational number**
   Ⓑ **a real number, but not rational**
   Ⓒ **a rational number, but not a real number**
   Ⓓ **neither a real nor a rational number**

6. The number 57 belongs to which of the following set(s) of numbers?

Ⓐ **N only**
Ⓑ **N, W, and Z only**
Ⓒ **N, W, Z, and Q only**
Ⓓ **All of the following: N, W, Z, Q, and R**

7. From the following set: {$-\sqrt{5}.7$, -9, 0, 5.25, 3i, $\sqrt{16}$}
Select the answer choice that shows the elements which are Natural numbers.

Ⓐ **$-\sqrt{5}.7$, -9, 0, 5.25, 3i, $\sqrt{16}$**
Ⓑ **$-\sqrt{5.7}$, -9, 0, 5.25, 3i**
Ⓒ **3i**
Ⓓ **Positive square root of 16**

8. From the following set: {$-\sqrt{5.7}$, -9, 0, 5.25, 3i, $\sqrt{16}$}
Select the answer choice that shows the elements that are Rational numbers.

Ⓐ **$-\sqrt{5.7}$, -9, 0, 5.25, 3i, $\sqrt{16}$**
Ⓑ **-9, 0, 5.25, $\sqrt{16}$**
Ⓒ **3i**
Ⓓ **$-\sqrt{5.7}$**

9. Which of the numbers below is irrational?

Ⓐ $\sqrt{169}$
Ⓑ $\sqrt{4}$
Ⓒ $\sqrt{16}$
Ⓓ $\sqrt{3}$

10. Write the repeating rational number 0.1515… as a fraction.

Ⓐ $\frac{85}{100}$

Ⓑ $\frac{15}{75}$

Ⓒ $\frac{15}{99}$

Ⓓ $\frac{25}{50}$

11. Write the repeating rational number .112112... as a fraction.

Ⓐ $\frac{112}{100}$

Ⓑ $\frac{112}{99}$

Ⓒ $\frac{112}{999}$

Ⓓ $\frac{111}{999}$

12. Which of the following is true of the square root of 2?

Ⓐ It is both real and rational.
Ⓑ It is real but not rational.
Ⓒ It is rational but not real.
Ⓓ It is neither real nor rational.

13. Which of the following sets includes the square root of -25?

Ⓐ R, Z, W, N, and Q
Ⓑ R, W, Q
Ⓒ Z, N
Ⓓ None of the above.

14. Complete the following statement:
The number 6.25 belongs to _____.

Ⓐ R, Q, Z, W, and N
Ⓑ R and Q
Ⓒ R and N
Ⓓ Q and Z

Name: _____ Date: _____

15. Complete the sentence:
Irrational numbers may always be written as _____.

Ⓐ **fractions**
Ⓑ **fractions and as decimals**
Ⓒ **decimals but not as fractions**
Ⓓ **neither decimals or fractions**

16. Which of the following are rational numbers?

Instruction : Mark all the correct options. More than one option may be correct.

Ⓐ $\frac{5}{7}$
Ⓑ $\sqrt{10}$
Ⓒ $\sqrt{25}$
Ⓓ π

17. Mark whether each number is rational or irrational.

	Rational	Irrational
$\sqrt{2}$		
$\frac{1}{3}$		
0.575		
$\frac{\sqrt{12}}{4}$		

18. Identify the irrational number and circle it.

Ⓐ 0.1
Ⓑ $\frac{5}{7}$
Ⓒ $\sqrt{10}$

Chapter 2: The Number System
Answer Key & Detailed Explanations

Name: _____ Date: _____

Lesson 1: Rational vs. Irrational Numbers

Question No.	Answer	Detailed Explanation
1	A	An integer belongs to the set containing the counting numbers, their additive inverses, and zero. Therefore, (-3) is an integer.
2	B	Rational numbers are the set of numbers that can be expressed as the quotient of two integers in which the denominator is not zero. All whole numbers can be expressed in this manner; so every whole number is a rational number.
3	B	$\sqrt{10}$ cannot be expressed as the ratio of two integers p and q and is therefore irrational.
4	B	Pi is the ratio of a circle's circumference to its diameter. It is therefore a real number. Pi cannot be expressed as the ratio of two integers, so it is irrational.
5	B	$\sqrt{7}$ cannot be expressed as the ratio of two integers and is therefore irrational. The irrationals are a subset of the real numbers.
6	D	The number 57 meets the requirements of each of the following sets of numbers: N (natural numbers), W (whole numbers), Z (integers), Q (rational numbers), and R (real numbers).
7	D	By definition, the natural numbers, N, are the set of counting numbers. Some mathematicians also include zero in this set. Since $\sqrt{16} = +4$ or -4 and +4 is a counting number, it is included in N. None of the choices offered 0 as an option; so, in this case, it is a mute point.
8	B	3i is an imaginary number and therefore not rational and $-\sqrt{5.7}$ cannot be expressed as a terminating or repeating decimal and consequently is not rational. Therefore, there is only one choice that does not include one or the other or both of these two numbers. Option B is the correct answer.
9	D	$\sqrt{3}$ is non-terminating and non-repeating.

Name: _____ Date: _____

Question No.	Answer	Detailed Explanation
10	C	1- Write equation 1 - Assign the repeating rational number to x: x = 0.1515... 2- Write equation 2 - Multiply equation 1 by 100: 100x = 15.1515... 3- Subtract equation 1 from 2: 100x = 15.1515... x = 0.1515... 99x = 15 x = 15/99
11	C	1- Write equation 1 - Assign the repeating rational number to x: x = 0.112112... 2- Write equation 2 - Multiply equation 1 by 1000: 1000x = 112.112... 3- Subtract equation 1 from 2: 1000x = 112.112112... x = 0.112112... 999x = 112 x = 112/999
12	B	$\sqrt{2}$ cannot be expressed as a non-terminating or non-repeating decimal and is therefore irrational. However, it is real.
13	D	The square root of a negative number is not a real number. Since the first three choices contain real numbers, none of them will fit.
14	B	Numbers with terminating decimals are real (R) and rational (Q), but are not integers (Z), whole numbers (W), or natural numbers (N).
15	C	By definition all rational numbers may be written as terminating or repeating decimals. Irrational numbers can be written as decimals (non-repeating, non-terminating), but not as fractions.
16	A, C	Rational numbers are numbers that can be expressed as a fraction. Since 5/7 is already a fraction that is one. The second answer, the square root of 25 gives you a whole number 5. This can be written as a fraction, 5/1. Thus, both are rational numbers.

17		**Rational numbers are numbers that can be expressed as a fraction. The square root of 2 gives you a decimal that does not repeat and doesn't end. Thus making it irrational. 1/3 is already expressed as a fraction, so it is rational. 0.575 can be written as 575/1000, thus making it rational. The last choice is a fraction, however, since it is a radical (and not a perfect square), this will not simplify into a fraction with integers as your numerator and denominator.**
18	**C**	**$\sqrt{10}$ is an irrational number because it cannot be written as a fraction. The others can.**

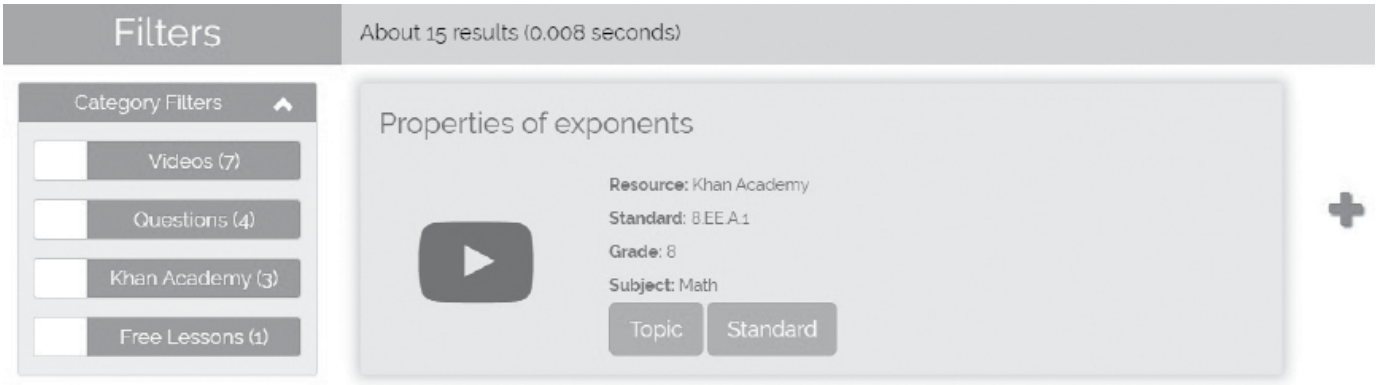
	Rational	Irrational
$\sqrt{2}$		●
$\frac{1}{3}$	●	
0.575	●	
$\frac{\sqrt{12}}{4}$		●

Name: _____ Date: _____

Chapter 3: Expressions and Equations

Lesson 1: Properties of Exponents

You can scan the QR code given below or use the url to access additional EdSearch resources including videos and mobile apps related to *Properties of Exponents*.



edSearch *Properties of Exponents*

URL	QR Code
http://www.lumoslearning.com/a/8eea1	

Name: _____ Date: _____

1. Is -5^2 equal to $(-5)^2$?

   Ⓐ Yes, because they both equal -25.
   Ⓑ Yes, because they both equal -10.
   Ⓒ Yes, because they both equal 25.
   Ⓓ No, because -5^2 equals -25 and $(-5)^2$ equals 25.

2. $\frac{X^6}{X^{-2}} =$

   Ⓐ $\frac{1}{X^3}$
   Ⓑ $\frac{1}{X^{12}}$
   Ⓒ X^4
   Ⓓ X^8

3. Which of the following is equal to 3^{-2} ?

   Ⓐ $\frac{1}{9}$
   Ⓑ -9
   Ⓒ 9
   Ⓓ $\frac{1}{6}$

4. Which of the following is equivalent to $X^{(2-5)}$?

   Ⓐ X^3
   Ⓑ $X^{\frac{1}{3}}$
   Ⓒ $\frac{1}{X^3}$
   Ⓓ 3^X

Name: _____ Date: _____

5. $1^9 =$

Ⓐ 1
Ⓑ 3
Ⓒ 9
Ⓓ $\frac{1}{9}$

6. $(X^{-3})(X^{-3}) =$

Ⓐ X^6
Ⓑ X^9
Ⓒ $\frac{1}{X^6}$
Ⓓ $\frac{1}{X^9}$

7. $(X^{-2})^{-7} =$

Ⓐ X^5
Ⓑ X^{14}
Ⓒ $\frac{1}{X^5}$
Ⓓ $\frac{1}{X^{14}}$

8. $(X^4)^0 =$

Ⓐ X
Ⓑ X^4
Ⓒ 1
Ⓓ 0

9. $(3^2)^3 =$

Ⓐ 3^5
Ⓑ 3^6
Ⓒ 3
Ⓓ 1

10. $5^2+5^3 =$ _____

11. Which of the following show the proper laws of exponents?

Note : More than one option may be correct. Select all the correct answers.

Ⓐ $3^2x3^5=3^{10}$
Ⓑ $(4^2)^3 = 4^6$
Ⓒ $\frac{8^5}{8^1} = 8^4$
Ⓓ $7^4x7^4=7^8$

12. Simplify this expression.
$a^7(a^8)(a)$

Write your answer in the box below

13. Select the ones that properly applied the different Laws of Exponents, making sure to keep positive exponents.

Note : More than one option may be correct. Select all the correct answers.

Ⓐ $(4a^3)^2 = 16a^6$
Ⓑ $(2x^4)^2 = 4x^6$
Ⓒ $(x^2y^{-1})^2 = \frac{x^4}{y^2}$
Ⓓ $(2a^{-2})^3 = 8a^6$

Chapter 3:
Expressions and Equations

Answer Key
&
Detailed Explanations

Name: _____ Date: _____

Lesson 1: Properties of Exponents

Question No.	Answer	Detailed Explanation
1	D	Unless there are parentheses to denote otherwise, the exponent is only applied to the constant or variable immediately preceding it. If there are parentheses immediately preceding it, then it is applied to everything within the parentheses.
2	D	When dividing quantities with like bases, you must subtract the exponents. 6 - (-2) =8 $\frac{X^6}{X^{-2}} = X^{6-(-2)} = X^8$
3	A	A quick way to change exponents from negative to positive is to move the expression to which the negative exponent is applied from the denominator to the numerator or vice versa and change the sign of the exponent. 3^{-2} is the same as $\frac{1}{3^2}$ which is the same as $\frac{1}{9}$.
4	C	$X^{(2-5)} = X^{-3}$ Now move x^{-3} to the denominator and change the sign of the exponent from negative to positive. $\frac{1}{X^3}$
5	A	Regardless of the number of 1s that we multiply the result is always 1 because 1 is the identity element for multiplication.
6	C	When multiplying quantities with the same base, you add exponents. $(X^{-3})(X^{-3}) = X^{-6}$ To change the exponent -6 to positive 6, you write the reciprocal of X^{-6}. $\frac{1}{X^6}$
7	B	$(x^{-2})^{-7} = x^{14}$ because to raise a power to a power, we multiply exponents.
8	C	4 x 0 = 0 and any number (other than 0, as 0^0 is not defined) to the 0 power is 1 by definition.
9	B	When raising a power to a power, multiply exponents.
10	150	$5^2 = 25$ and $5^3 = 125$ 25 +125 = 150

Name: _____ Date: _____

Question No.	Answer	Detailed Explanation
11	B,C & D	Option B is using the Power of a Power Property $(4^2)^3=4^6$ because $4^2 \times 4^2\ 4^2 = 4^{2+2+2}= 4^6$. Option C is using Division Property of Exponents $8^5/8^1=8^4$. This is true because $\frac{8\times8\times8\times8\times8}{8}$ when simplified, leaves you with $8\times8\times8\times8$ which is 8^4. Option D is using the Multiplicative Property of Exponents. $7^4 \times 7^4 = 7^8$ because $7\times7\times7\times7\times7\times7\times7\times7=7^8$
12	a^{16}	You are using your product rule to find out the exponent. When using the product rule if the base is the same, then you add the exponents. In this case, you will add $7+8+1=16$. So it would become a^{16}.
13	A, C	In the expression $(4a^3)^2$ you are applying the Power of a Power Law. You distribute the squared to each term in the parentheses to end up with 4^2a^{3x2} which simplifies to $16a^6$. The same thing applies to $(x^2y^{-1})^2$ so you end up with x^{2x2} and y^{-1x2}. These simplify to x^4 and y^{-2}. In this case, since you want to keep positive exponents, you have to move the y term to the denominator to keep positive exponents. Thus making it $\frac{x^4}{y^2}$

Name: _____ Date: _____

Chapter 4: Functions

Lesson 1: Functions

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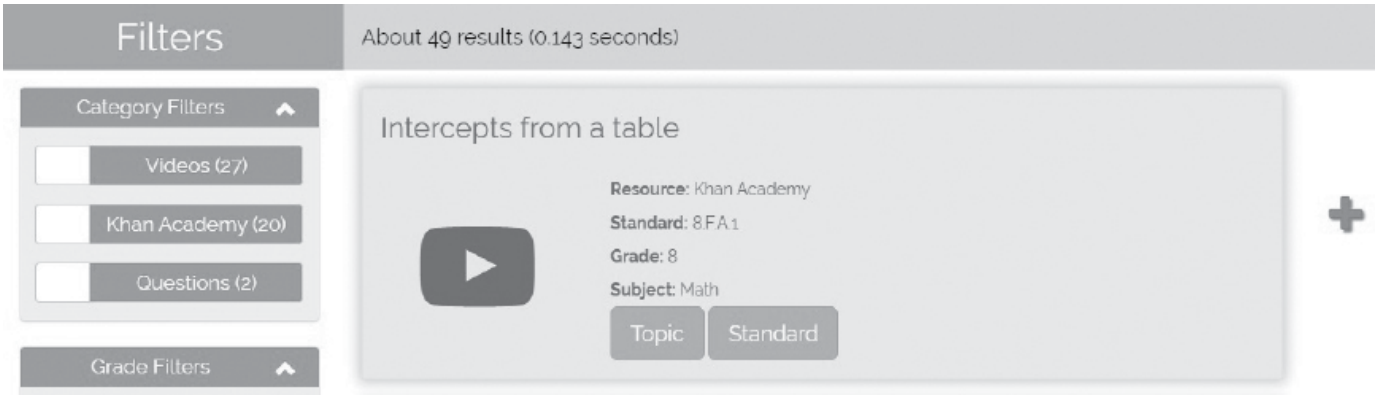

edSearch ***Functions***

URL	QR Code
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Name: _____ Date: _____

1. Which of the following is NOT a function?

Ⓐ **{(2, 3), (4, 7), (8, 6)}**
Ⓑ **{(2, 2), (4, 4), (8, 8)}**
Ⓒ **{(2, 3), (4, 3), (8, 3)}**
Ⓓ **{(2, 3), (2, 7), (8, 6)}**

2. Which of the following tables shows that y is a function of x?

Ⓐ

x	y
1	4
1	7
4	7

Ⓑ

x	y
1	7
3	8
4	7

Ⓒ

x	y
3	2
3	7
4	8

Ⓓ

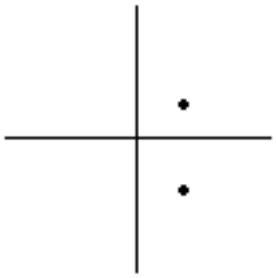
x	y
1	7
4	7
4	9

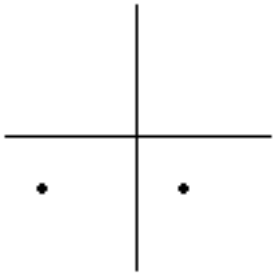
3. If y is a function of x, which of the following CANNOT be true?

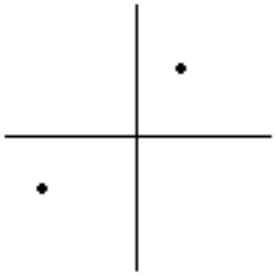
Ⓐ **A particular x value is associated with two different y values.**
Ⓑ **Two different x values are associated with the same y value.**
Ⓒ **Every x value is associated with the same y value.**
Ⓓ **Every x value is associated with a different y value.**

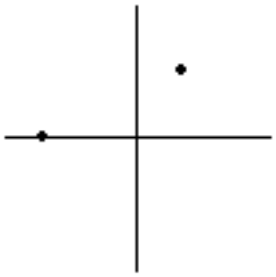
Name: _____ Date: _____

4. Each of the following graphs consists of two points. Which graph could NOT represent a function?

Ⓐ 

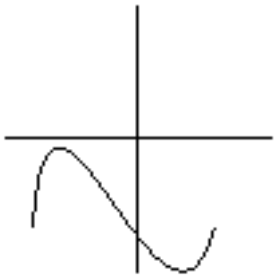
Ⓑ 

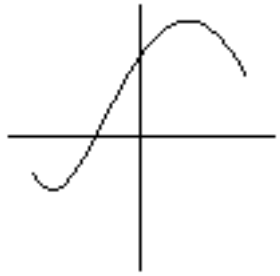
Ⓒ 

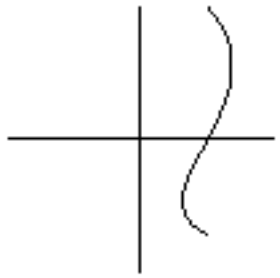
Ⓓ 

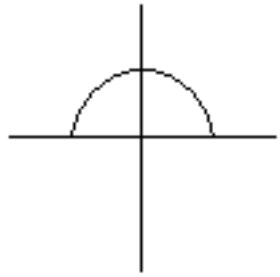
Name: _____ Date: _____

5. Which of the following could NOT be the graph of a function?

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

6. Which of the following is NOT a function?

Ⓐ **{(0, 0), (2, 2), (4, 4)}**
Ⓑ **{(0, 4), (2, 4), (4, 4)}**
Ⓒ **{(0, 0), (2, 0), (4, 0)}**
Ⓓ **{(0, 0), (0, 2), (0, 4)}**

7. **Which of the following is true of the graph of any non-constant function?**

   Ⓐ **A line drawn parallel to the x-axis will never cross the graph.**
   Ⓑ **A line drawn perpendicular to the x-axis will never cross the graph.**
   Ⓒ **A line drawn through the graph parallel to the x-axis will cross the graph one and only one time.**
   Ⓓ **A line drawn through the graph perpendicular to the x-axis will cross the graph one and only one time.**

8. **The given set represents a function:**
   {(0,1), (1,1), (2,1)}
   If the ordered pair ____ was added to the set, it would no longer be a function.

   Ⓐ **(3,1)**
   Ⓑ **(3,2)**
   Ⓒ **(3,3)**
   Ⓓ **(2,3)**

9. **In order for this set, {(6,5), (5, 4), (4,3)}, to remain a function, which of the following ordered pairs COULD be added to it?**

   Ⓐ **(6,6)**
   Ⓑ **(5,5)**
   Ⓒ **(4,4)**
   Ⓓ **(3,3)**

10. **Which of the following sets of ordered pairs represents a function?**

    Ⓐ **[(0,1), (0,2), (1,3), (1,4)]**
    Ⓑ **[(1,1), (1,2), (1,3), (1,4)]**
    Ⓒ **[(2,5), (2,6), (4,7), (5,7)]**
    Ⓓ **[(-7,10), (7,10), (8,9), (9,10)]**

11. **Select the sets of ordered pairs that represent a function.**

    There can be more than one correct option. Select all the correct options.

    Ⓐ **{(1,1),(2,2),(3,3),(4,4)}**
    Ⓑ **{(1,-2),(-2,0),(-1,2),(1,3)}**
    Ⓒ **{(-2,3),(0,1),(2,-1),(3,-2)}**
    Ⓓ **{(-1,7),(0,-3),(1,10),(0,7)}**

Name: _____ Date: _____

12. Write the function that would go with the table.

x	2	3	4	5
y	-1	0	1	2

13. Select whether or not each example represents a function.

	Function	Not a Function
{(2,10),(2,20),(4,20),(6,30)}	○	○
{(4,10),(8,12),(4,11),(12,13)}	○	○
{(1,3),(2,4),(3,7),(4,13)}	○	○
y=7x-2	○	○

Chapter 4:
Functions

Answer Key
&
Detailed Explanations

Name: _____ Date: _____

Lesson 1: Functions

Question No.	Answer	Detailed Explanation
1	D	In order to be classified as a function each x must map to one and only one value of y. In the case of the set of ordered pairs {(2, 3), (2, 7), (8, 6)}, the x value of 2 has two different values for y, 3 and 7. Therefore, this set does not classify as a function.
2	B	In the case of x | y 1 | 7 3 | 8 4 | 7 for each x there is one and only one value for y. Therefore, this table represents a function.
3	A	If y is a function of x, a particular x value CANNOT be associated with two or more values of y.
4	A	In the first graph, for a certain value of x, there are two distinctly different values for y. This is NOT a function.
5	C	In the third graph for certain values of x, there are more than one value for y. This is NOT a function
6	D	{(0, 0), (0, 2), (0, 4)} does not qualify as a function because for x = 0, there is more than one value for y.
7	D	A line drawn through the graph perpendicular to the x-axis will cross the graph one and only one time because, for each value of x, there will be one and only one value of y.
8	D	In a function, for each value of x, there must be one and only one value for y. We already have (2,1) so cannot have another ordered pair where x=2.
9	D	There is already an assigned y value for x=6, x=5, and x=4, but not for x = 3.
10	D	Only this set, [(-7,10), (7,10), (8,9), (9,10)], represents a function because for each value for x, there exists one and only one value for y.

Question No.	Answer	Detailed Explanation
11	A, C	If a set of ordered pairs is a function then it will have each x-value going to only one y-value. If an x-value is paired with more than one y-value, then it is not a function.
12	y=x-3	The rule for this function is y=x-3. To get this you find the slope first. In this case the slope is 1. Then you find out when the y is zero. In this case it is when x is 3. Thus combining them to form the rule.
13		It is a function if each x-value is paired with only one y-value. If y depends linearly on x, in the form, y = mx + b, then also it is a function. Because, in such cases too, for each value of x, there is only one value of y.

Progress Chart

Standard	Lesson	Page No.	Practice		Mastered	Re-practice /Reteach
CCSS			Date	Score		
8.NS.A.1	Rational vs. Irrational Numbers	10				
8.NS.A.2	Approximating Irrational Numbers	15				
8.EE.A.1	Properties of Exponents	26				
8.EE.A.2	Square & Cube Roots	30				
8.EE.A.3	Scientific Notations	34				
8.EE.A.4	Solving Problems Involving Scientific Notation	38				
8.EE.B.5	Compare Proportions)	42				
8.EE.B.6	Understanding Slope	47				
8.EE.C.7.A	Solving Linear Equations	52				
8.EE.C.7.B	Solve Linear Equations with Rational Numbers	56				
8.EE.C.8.A	Solutions to Systems of Equations	61				
8.EE.C.8.B	Solving Systems of Equations	66				
8.EE.C.8.C	Systems of Equations in Real-World Problems	71				
8.F.A.1	Functions	104				
8.F.A.2	Comparing Functions	110				
8.F.A.3	Linear Functions	116				
8.F.B.4	Linear Function Models	122				
8.F.B.5	Analyzing Functions	129				

Standard	Lesson	Page No.	Practice		Mastered	Re-practice /Reteach
CCSS			Date	Score		
8.G.A.1	Transformations of Points & Lines	148				
8.G.A.1.B	Transformations of Angles	153				
8.G.A.1.C	Transformations of Parallel Lines	162				
8.G.A.2	Transformations of Congruency	170				
8.G.A.3	Analyzing Transformations	175				
8.G.A.4	Transformations & Similarity	180				
8.G.A.5	Interior & Exterior Angles in Geometric Figures	185				
8.G.B.6	Verifying the Pythagorean Theorem	190				
8.G.B.7	Pythagorean Theorem in Real-World Problems	194				
8.G.B.8	Pythagorean Theorem & Coordinate System	201				
8.G.C.9	Finding Volume: Cone, Cylinder, & Sphere	205				
8.SP.A.1	Interpreting Data Tables & Scatter Plots	232				
8.SP.A.2	Scatter Plots, Line of Best Fit	240				
8.SP.A.3	Analyzing Linear Scatter Plots	248				
8.SP.A.4	Relatable Data Frequency	255				

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