LSU Dual Enrollment Program for Math
Algebra II COURSE PROFILE with LMS 7-12-2021

ETEXT: ***Algebra II in MyMathLab,*** **Elayn Martin-Gay, with contributions from Robert Blitzer**
HIGH SCHOOL COURSE CODE: 160322

CHAPTERS
4 – Systems of Equations
6 – Exponents, Polynomials, and Polynomial Functions
7 – Rational Expressions
8 – Rational Exponents, Radicals, and Complex Numbers
9 – Quadratic and Higher Degree Equations and Functions
10 – Exponential and Logarithmic Functions
12 – Sequences and Series
14 – Trigonometric Functions and Identities
X – Statistics (from another book)

The number in parentheses indicates the number of homework exercises on that topic in MyLab Math.

Chapter 4: Systems of Equations

Section 4.1 Systems of Equations (30)

LMS: A-REI.C.6

- Determine whether an ordered pair is solution of a system of two linear equations
- Solve a system by graphing
- Solve a system by substitution
- Solve a system by elimination
- Solve applications

Section 4.2 Solving Systems of Equations in Three Variables (13)

LMS: A-REI.C.6

- Determine whether an ordered triple is a solution of system of three linear equations
- Solve a system of three linear equations in three variables

Section 4.3 Systems of Linear Equations and Problem Solving (18)

LMS: F-BF.A.1a, A-REI.C.6

- Solve problems that can be modeled by a system of two linear equations
- Solve problems with cost and revenue functions
- Solve problems that can be modeled by a system of three linear equations

Chapter 6: Exponents, Polynomials, and Polynomial Functions

Section 6.5 The Greatest Common Factor and Factoring by Grouping (17)

LMS: A-SSE.A.2

- Factor out the GCF of a polynomial's terms
- Factor polynomials by grouping

Section 6.6 Factoring Trinomials (31)

LMS: A-SSE.A.2

- Factor trinomials of the form $x^2 + bx + c$
- Factor trinomials of the form $ax^2 + bx + c$ by trial and check or by grouping
- Factor by substitution

Section 6.7 Factoring by Special Products (30)

LMS: A-SSE.A.2

- Factor a perfect square trinomial
- Factor the difference of two squares
- Factor the sum or difference of two cubes

Section 6.8 Solving Equations by Factoring and Problem Solving (22)

LMS: A-APR.B.3, A-REI.B.4b

- Solve polynomial equations by factoring
- Solve problems that can be modeled by polynomial equations
- Find the x-intercepts of a polynomial function

Chapter 7: Rational Expressions

Section 7.1 Rational Expressions (20)

LMS: A-APR.D.6

- Find the domains of rational expressions
- Simplify rational expressions

Section 7.4a Dividing Polynomials (23)

LMS: A-APR.D.6

- Divide a polynomial by a monomial
- Divide by a polynomial
- Use synthetic division to divide a polynomial by a binomial

Section 7.4b Dividing Polynomials (11)

LMS: A-APR.B.2, A-APR.D.6

- Use the remainder theorem to evaluate polynomials
- Use the factor theorem

Section 7.5 Solving Equations Containing Rational Expressions (28)

LMS: A-REI.A.2

- Solve equations containing rational expressions

Section 7.6 Rational Equations and Problem Solving (23)

LMS: A-REI.A.2, A-CED.A.1

Solve equations that contain radical expressions
Use the Pythagorean Theorem to model problems
Solve application problems

Chapter 8: Rational Exponents, Radicals, and Complex Numbers

Section 8.1 Radicals and Radical Functions (31)

LMS: N-RN.A.1. N-RN.A.2, F-IF.B.2, F-IF.C.7b, F-BF.B.3

Find square roots
Approximate roots
Find cube roots
Find *n*th roots
Find the *n*th root of a^n, where a is a real number
Graph square root and cube root functions

Section 8.2 Rational Exponents (41)

LMS: N-RN.A.1, N-RN.A.2

Understand the meaning of $a^{\frac{1}{n}}$
Understand the meaning of $a^{\frac{m}{n}}$
Understand the meaning of $a^{-\frac{m}{n}}$
Use rules for exponents to simplify expressions that contain rational exponents
Use rational exponents to simplify radical expressions

Section 8.3 Simplifying Radical Expressions (27)

LMS: N-RN.A.1

Use the product rule for radicals
Use the quotient rule for radicals
Simplify radicals

Section 8.4 Adding, Subtracting, and Multiplying Radical Expressions (34)

LMS: N-RN.A.2, A-SSE.A.2

Add or subtract radical expressions
Multiply radical expressions

Section 8.5 Rationalizing Denominators and Numerators of Radical Expressions (23)

LMS: A-SSE.A.2

Rationalize denominators
Rationalize denominators having two terms
Rationalize numerators

Section 8.6 Solving Radical Equations (28)

LMS: A-REI.A.2

Solve equations that contain radical expressions
Use the Pythagorean Theorem to model problems
Solve application problems

Section 8.7 Complex Numbers (46)

LMS: N-CN.A.1, N-CN.A.2

- Write square roots of negative numbers in the form bi
- Add or subtract complex numbers
- Multiply complex numbers
- Raise i to powers

Chapter 9: Quadratic and Higher Degree Equations and Functions

Section 9.1 Solving Quadratic Equations by Completing the Square (32)

LMS: A-REI.B.4b, A-CED.A.1, N-CN.C.7

- Use the square root property to solve quadratic equations
- Complete and factor a perfect square trinomial
- Solve quadratic equations by completing the square
- Use quadratic equations to solve problems

Section 9.2 Solving Quadratic Equations by the Quadratic Formula (23)

LMS: A-REI.B.4b, N-CN.C.7

- Solve quadratic equations by using the quadratic formula
- Determine number and type of solutions of quadratic equations using discriminant
- Solve geometric problems modeled by quadratic equations

Section 11.7 Solving Nonlinear Systems of Equations (14)

LMS: A-REI.C.7

- Solve a nonlinear system by substitution
- Solve a nonlinear system by elimination
- Verify solutions to nonlinear systems found using graphs

Section 9.3 Solving Equations by Using Quadratic Methods (24)

LMS: A-REI.B.4b, N-CN.C.7

- Solve quadratic equations by squaring both sides
- Solve quadratic equations by multiplying by the lowest common denominator
- Solve higher degree equations in quadratic form
- Solve equations by converting to a quadratic with substitution
- Solve various equations that are quadratic in form
- Solve problems that lead to quadratic equations

Section 9.4 Zeros of Polynomial Functions (19)

LMS: F-IF.C.7c, A-APR.B.2, A-APR.B.3

- Find zeros of a polynomial function and their multiplicities
- Use the factor theorem and synthetic division
- Find polynomials with given zeros

Section 9.5 Graphs of Polynomial Functions (33)

LMS: A-APR.B.3, F-BF.B.3, F-IF.C.7c

- Graph even and odd power functions
- Describe the end behavior of a polynomial function
- Find the x-intercepts of a polynomial function

Find the maximum number of real zeros, x-intercepts, and turning points of a polynomial equation
Graph polynomial functions

Chapter 10: Exponential and Logarithmic Functions

Section 10.2 Inverse Functions (22)

LMS: F-BF.B.4a

Determine whether a function is a one-to-one function
Find the inverse of a function
Use the horizontal line test to decide whether a function is a one-to-one function
Find the equation of the inverse of a function
Graph functions and their inverses

Section 10.3 Exponential Functions (47)

LMS: F-IF.C.7e, F-BF.B.3, A-CED.A.1, F-LE.A.2

Evaluate exponential expressions
Graph exponential functions
Graph exponential functions using transformations
Solve equations of the form $b^x = b^y$
Solve problems modeled by exponential equations
Use compound interest formulas to find investment values

Section 10.4 Logarithmic Functions (46)

LMS: A-CED.A.1, F-IF.C.7e, F-BF.B.3

Convert between logarithmic and exponential notation
Find the value of logarithmic expressions
Solve logarithmic equations by using exponential notation
Simplify using the properties of logarithms
Identify and graph logarithmic functions

Section 10.5 Properties of Logarithms (38)

LMS: A-SSE.A.2

Use the product property of logarithms
Use the quotient property of logarithms
Use the power property of logarithms
Use the properties of logarithms together

Section 10.6 Common Logarithms, Natural Logarithms, and Change of Base (33)

LMS: A-CED.A.1

Identify and approximate common logarithms
Identify and approximate natural logarithms
Evaluate common logarithms of powers of 10
Evaluate natural logarithms of powers of *e*
Solve logarithmic equations
Use the change of base formula
Solve applications

Section 10.7 Exponential and Logarithmic Equations and Applications (34)

LMS: A-CED.A.1, F-LE.A.2, F-LE.A.4, F-LE.B.5

Solve exponential equations
Solve logarithmic equations
Solve problems that can be modeled by exponential and logarithmic equations

Chapter 12: Sequences and Series

Section 12.2 Arithmetic and Geometric Sequences (22)

LMS: F-BF.A.2, F-LE.A.2

Identify arithmetic sequences and their common differences.
Identify geometric sequences and their common ratios.
Determine if a sequence is arithmetic or geometric.
Find the *n*th term of a geometric sequence.
Solve applications.

Section 12.3 Finite Geometric Sequences (9)

LMS: A-SSE.B.4

Find the sum of a geometric series
Solve applications

Chapter 14: Trigonometric Functions and Identities

Section 14.1 Angles and Radian Measure (42)

LMS: F-TF.A.1, F-TF.A.2

Use radian measure
Convert between degrees and radians
Draw angles in standard position
Find coterminal angles
Find the length of a circular arc.

Section 14.2 Right Triangle Trigonometry (20)

LMS: F-TF.C.8, G-SRT.C.6

Use right triangles to evaluate trigonometric functions
Find trigonometric function values for 30° $\left(\frac{\pi}{6}\right)$, 45° $\left(\frac{\pi}{4}\right)$, and 60° $\left(\frac{\pi}{3}\right)$
Recognize and use fundamental identities
Evaluate trigonometric functions with a calculator

Section 14.3 Trigonometric Functions of Any Angle (51)

LMS: F-TF.A.2, F-TF.C.8

Use the definitions of trigonometric functions of any angle
Use the signs of the trigonometric functions
Find reference angles
Use reference angles to evaluate trigonometric functions

Section 14.4 Trig Functions of Real Numbers; Periodic Functions (25)

LMS: F-TF.A.2, F-IF.B.4

- Use a unit circle to define trigonometric functions of real numbers
- Use even and odd trigonometric functions
- Use periodic properties
- Solve application problems

Section 14.5 Graphs of Sine and Cosine Functions (39)

LMS: F-TF.B.5, F-IF.C.7e

- Understand the graph of $y = \sin x$
- Graph variations of $y = \sin x$
- Understand the graph of $y = \cos x$
- Graph variations of $y = \cos x$
- Use vertical shifts of sine and cosine curves
- Solve Application problems

Chapter X: Statistics

Section X.1 Observational Studies, Designed Experiments, and Sample Surveys (14)

LMS: S-IC.A.1, S-IC.B.3, S-IC.B.6

- Identify characteristics of the design of an experimental study
- Describe effects of an experimental study design on its outcome
- Define terms relating to experiments and studies
- Explain the sources of bias in sampling

Section X.2 Standard Deviation (19)

LMS: S-ID.A.4

- Determine the standard deviation for a data set
- Compare two data sets using measures of dispersion

Section X.3 Normal Distribution (22)

LMS: S-ID.A.4, S-IC.B.4

- Use and interpret margins of error
- Find scores at a specified standard deviation from the mean
- Use the 68–95–99.7 Rule
- Solve applied problems involving normal distributions
- Understand percentiles and quartiles
- Convert a data item to a z-score

LMS for Algebra II that are not reflected in *MyLab Math* course exercises:

LMS#	**Standard Description**
N-Q.A.2	Define appropriate quantities for the purpose of descriptive modeling.
A-SSE.B.3c	Use the properties of exponents to transform expressions for exponential functions.
A-APR.C.4	Prove polynomial identities and use them to describe numerical relationships.
A-REI.A.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
A-REI.D.11	Explain why the *x*-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations.
F-IF.B.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.
F-IF.C.8b	Use the properties of exponents to interpret expressions for exponential functions.
F-IF.C.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
S-ID.B.6a	Fit a function to the data; use functions fitted to data to solve problems in the context of the data.
S-IC.A.2	Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation.
S-IC.B.5	Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.

LSU Dual Enrollment Program for Math
Algebra II Supplemental Activities

Standard # and Description	N-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.
Source	Illustrative Mathematics https://www.illustrativemathematics.org/content-standards/tasks/1850

Giving raises

A small company wants to give raises to their 5 employees. They have $10,000 available to distribute. Imagine you are in charge of deciding how the raises should be determined.

a. What are some variables you should consider?
b. Describe mathematically different methods to distribute the raises.
c. What information do you need to compute the raises for each employee?
d. Make up the information you need to compute specific raises for 2 different methods and apply them to the situation. Compute the specific dollar amount each employee receives as a raise.
e. Choose one your methods that you think is most fair and construct an argument that supports your decision.

Standard # and Description	A-SSE.B.3c Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. c. Use the properties of exponents to transform expressions for exponential functions. *For example the expression* 1.15^t *can be rewritten as* $\left(1.15^{\frac{1}{12}}\right)^{12t} \approx 1.012^{12t}$ *to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.*
Source	Illustrative Mathematics https://www.illustrativemathematics.org/content-standards/HSA/SSE/B/3/tasks/1305

Forms of Exponential Expressions

Four physicists describe the amount of radioactive substance, *Q* in grams, left after *t* years:

a. $Q = 300e^{-0.0577t}$

b. $Q = 300\left(\frac{1}{2}\right)^{\frac{t}{12}}$

c. $Q = 300\left(0.9439\right)^{t}$

d. $Q = 252.290\left(0.9439\right)^{t-3}$

(i) Show that the expressions describing the radioactive substance are all equivalent (using appropriate rounding).

(ii) What aspect of the decay substance does each of the formulas highlight?

Standard # and Description	A-APR.C.4 Use polynomial identities and use them to describe numerical relationships. *For example, the polynomial identity* $(x^2+y^2)^2=(x^2-y^2)^2+(2xy)^2$ *can be used to generate Pythagorean triples.*
Source	PARCC Performance Based Assessment Released Items

Part A

Let *x* and *y* represent natural numbers. Prove that the following equation is true for all x and *y* values. Show your work or explain your answer.

$$(x^2+y^2)^2-(x^2-y^2)^2=(2xy)^2$$

Part B

Jenna claims that x^2-y^2, $2xy$, and x^2+y^2 can be used to find the side lengths for right triangles. Explain why Jenna is correct. Also, explain what restrictions, if any, must be placed on the values of x and y when they are being used to find side lengths for triangles.

Standard # and Description	A-REI.A.1 Explain each step in solving an equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
Source	Louisiana Student Standards: Companion Document for Teachers (Algebra II) https://www.louisianabelieves.com/resources/library/k-12-math-year-long-planning

Show that $x=2$ and $x=-3$ are solutions to the equation $x^2+x=6$. Write the equation in a form that shows these are the only solutions, explaining each step in your reasoning.

Explain the steps involved in solving each of the following:

$5(2^t)+20=60$

$5(2^t)=40$

$(2^t)=8$

$2^t=2^3$

$t=3$

$8(1.5)^x=200$

$(1.5)^x=25$

$(10^{\log 1.5})^x=10^{\log 25}$

$x\log 1.5=\log 25$

$x=\dfrac{\log 25}{\log 1.5}\approx 7.94$

$2000(1.06)^x=10000$

$(1.06)^x=5$

$e^{x\ln 1.06}=e^{\ln 5}$

$x\ln 1.06=\ln 5$

$x=\dfrac{\ln 5}{\ln 1.06}\approx 27.62$

Standard # and Description	A-REI.D.11 Explain why the *x*-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.
Source	Illustrative Mathematics https://tasks.illustrativemathematics.org/content-standards/HSA/REI/D/11/tasks/618

Two Squares are Equal

Solve the quadratic equation $x^2 = (2x-9)^2$ using as many different methods as possible.

Standard # and Description	F-IF.B.6 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.
Source	Louisiana Student Standards: Companion Document for Teachers (Algebra II) https://www.louisianabelieves.com/resources/library/k-12-math-year-long-planning

1. Use the table to find the average rate of change of g over the intervals $[-2,-1]$ and $[0,2]$:

x	$g(x)$
-2	2
-1	-1
0	-4
2	-10

2. The plug is pulled in a small hot tub. The table gives the volume of water in the tub from the moment the plug is pulled, until it is empty. What is the average rate of change between
   (a) 60 seconds and 100 seconds?
   (b) 0 seconds and 120 seconds?
   (c) 70 seconds and 110 seconds?

Time (seconds)	**Volume (liters)**
0	1600
10	1344
20	1111
30	900
40	711
50	544
60	400
70	278
80	178
90	100
100	44
110	11
120	0

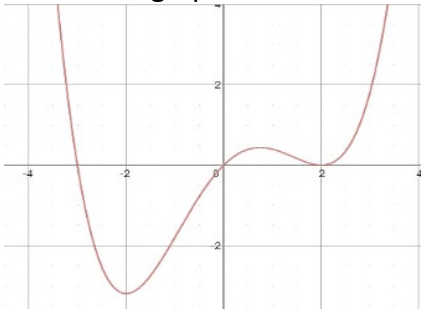
Standard # and Description	F-IF.C.8b Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. b. Use the properties of exponents to interpret expressions for exponential functions. *For example, identify percent rate of change in functions such as* $y=(1.02)^t$, $y=(0.97)^t$, $y=(1.01)^{12t}$, and $y=(1.2)^{\frac{t}{10}}$ *, and classify them as representing exponential growth or decay.*
Source	Louisiana Student Standards: Companion Document for Teachers (Algebra II) https://www.louisianabelieves.com/resources/library/k-12-math-year-long-planning

1. The projected population of Delroysville is given by the function $p(t)=1500(1.08)^{2t}$ where *t* is the number of years since 2010. You have been selected by the city council to help them plan for future growth. Explain what the function $p(t)=1500(1.08)^{2t}$ means to the city council members.
2. Suppose a single bacterium lands on one of your teeth and starts reproducing by a factor of 2 every hour. If nothing is done to stop the growth of the bacteria, write a function for the number of bacteria as a function of the number of days.
3. The expression $50(0.85)^x$ represents the amount of a drug in milligrams that remains in the bloodstream after *x* hours.
    a. Describe how the amount of drug in milligrams changes over time.
    b. What would the expression $50(0.85)^{12x}$ represent?
    c. What new or different information is revealed by the changed expression?

Standard # and Description	F-IF.C.9 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.*
Source	Louisiana Student Standards: Companion Document for Teachers (Algebra II) https://www.louisianabelieves.com/resources/library/k-12-math-year-long-planning

If $f(x)=-(x+7)^2(x-2)$ and $g(x)$ is represented on the graph below.

a. What is the difference between the zero with the least value of $f(x)$ and the zero with the least value of $g(x)$?
b. Which has the largest relative maximum value?
c. Describe the end behaviors of the graphs of each function. Why are they different?



Standard # and Description	S-ID.B.6a Represent data on two quantitative variables on a scatter plot and describe how the variables are related. a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. *Emphasize exponential models.*
Source	Illustrative Mathematics https://tasks.illustrativemathematics.org/content-standards/HSS/ID/B/6/tasks/941

Used Subaru Foresters

Jane wants to sell her Subaru Forester but doesn't know what the listing price should be. She checks on craigslist.com and finds 22 Subarus listed. The table below shows age (in years), mileage (in miles), and listed price (in dollars) for these 22 Subarus. (Collected on June 6th, 2012, for the San Francisco Bay Area.)

AGE	MILEAGE	PRICE
8	109428	12995
5	84804	14588
3	55321	20994
3	57474	18991
1	11696	19981
13	125260	6888
10	67740	9888
11	97500	6950
6	36967	19700
12	148000	3995
2	29836	18990
3	32349	21995
10	161460	5995
4	68075	12999
3	30007	22900
8	66000	13995
10	93450	8488
3	35518	22995
3	30047	20850
8	107506	11988
11	89207	8995
13	141235	5977

a. Make appropriate plots with well-labeled axes that would allow you to see if there is a relationship between price and age and between price and mileage. Describe the direction, strength and form of the relationships that you observe. Does either mileage or age seem to be a good predictor of price?
b. If appropriate, describe the strength of each relationship using the correlation coefficient. Do the values of the correlation coefficients agree with what you see in the plots?
c. Pick the stronger relationship and use the data to find an equation that describes this relationship. Make a residual plot and determine if the model you chose is a good one. Write a few sentences explaining why (or why not) the model you chose is appropriate.
d. If Jane's car is 9 years old with 95000 miles on it, what listing price would you suggest? Explain how you arrived at this price.

Standard # and Description	S-IC.A.2 Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. *For example, a model says a spinning coin will fall heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?*
Source	Illustrative Mathematics https://tasks.illustrativemathematics.org/content-standards/HSS/IC/A/2/tasks/125

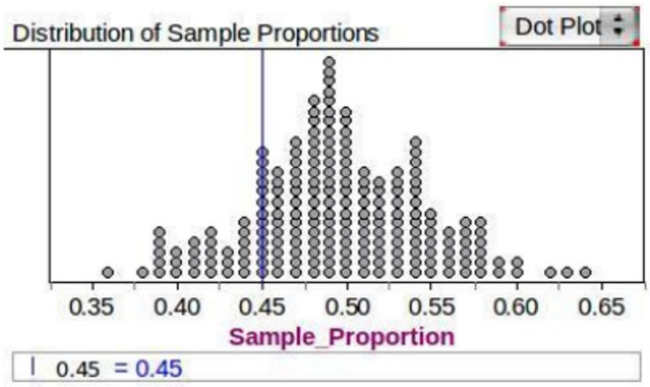
Block Scheduling

A random sample of 100 students from a specific high school resulted in 45% of them favoring a plan to implement block scheduling. Is it plausible that a majority of the students in the school actually favor the block schedule? Simulation can help answer the questions.

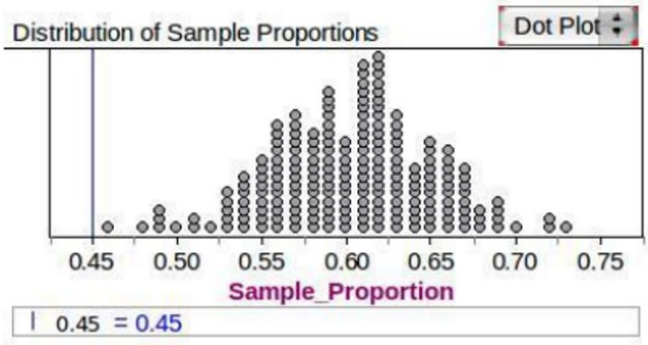
The accompanying plots show a simulated distribution of sample proportions for samples of size 100 from a population in which 50% of the students favor the plan, and another distribution from a population in which 60% of the students favor the plan. Each simulation contains 200 runs.

a. What do you conclude about the plausibility of a population proportion of 0.50 when the sample proportion is only 0.45?
b. What about the plausibility of 0.60 for the population proportion?

Population proportion 0.5; sample size 100



Population proportion 0.6; sample size 100



Standard # and Description	S-IC.B.5 Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.
Source	Louisiana Student Standards: Companion Document for Teachers (Algebra II) https://www.louisianabelieves.com/resources/library/k-12-math-year-long-planning

1. Sal purchased two types of plant fertilizer and conducted an experiment to see which fertilizer would be best to use in his greenhouse. He planted 20 seedlings and used Fertilizer A on ten of them and Fertilizer B on the other ten. He measured the height of each plant after two weeks. Use the data below to determine which fertilizer Sal should use.

Fertlizer A	23.4	30.1	28.5	26.3	32.0	29.6	26.8	25.2	27.5	30.8
Fertlizer B	19.8	25.7	29.0	23.2	27.8	31.1	26.5	24.7	21.3	25.6

   a. Use the data to generate simulated treatment results by randomly selecting ten plant heights from the twenty plant heights listed.
   b. Calculate the average plant height for each treatment of ten plants.
   c. Find the difference between consecutive pairs of treatment averages and compare. Does your simulated data provide evidence that the average plant heights using Fertlizer A and Fertilizer B is significant?

2. "Are Starbucks customers more likely to be female?" To answer the question, students decide to randomly select 30-minute increments of time throughout the week and have an observer record the gender of every tenth customer who enters the Starbucks store. At the end of the week, they had collected data on 260 customers, 154 females and 106 males. This data seems to suggest more females visited Starbucks during this time than males.
   To determine if these results are statistically significant, students investigated if they could get this proportion of females just by chance if the population of customers is truly 50% females and 50% males. Students simulated samples of 260 customers that are 50-50 females to males by flipping a coin 260 times, and then recording the proportion of heads to represent the number of women in a random sample of 260 customers (e.g., 0.50 means that 130 of the 260 flips were heads). Their results are displayed in the graph below. Use the distribution to determine if the class's data is statistically significant enough to conclude that Starbucks customers are more likely to be female.