ELEMENTS OF BASIC ALGEBRA A + ELEMENTS OF BASIC ALGEBRA B
ALGEBRA I

	Algebra A			Algebra B		
	Student Text	**Practice Book**	**Teacher Resource Edition Activities & Projects**	**Student Text**	**Practice Book**	**Teacher Resource Edition Activities & Projects**
1. Explain how the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for an additional notation for radicals using rational exponents.					27	
2. Rewrite expressions involving radicals and rational exponents using the properties of exponents.	2, 24, 25, 26, 27, 31, 32, 33, 34, 35, 36, 37, 156, 157, 158, 159, 160	21, 22, 23, 24, 25, 26, 27, 34, 35, 36, 37, 38, 39	Ch5, Ch6, Ch7, Ch8, Ch32	40, 41, 42, 61, 62, 118, 119		Ch13
3. Define the imaginary number i such that i2 = -1.						
Algebra and Functions						
Focus 1: Algebra						
4. Interpret linear, quadratic, and exponential expressions in terms of a context by viewing one or more of their parts as a single entity. *Example: Interpret the accrued amount of investment* P(1 + r)t , *where* P *is the principal and* r *is the interest rate, as the product of* P *and a factor depending on time* t.	3, 4, 12, 17, 18, 19, 28, 29, 30, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 61, 62, 101, 102, 103, 104, 105, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 132, 141, 156, 157, 158, 159, 160, 172, 177	17, 18, 44, 47, 48, 49, 102	Ch1, Ch2, Ch4, Ch5, Ch6, Ch7, Ch8, Ch9, Ch10, Ch11, Ch15, Ch17, Ch22, Ch23, Ch24	1, 32, 63, 89, 90, 91, 93, 94, 125, 156, 157, 158, 159, 160, 161	1, 33, 34, 40, 41, 51, 54, 55, 60, 61, 62, 64, 65	Ch1, Ch8, Ch13, Ch31
5. Use the structure of an expression to identify ways to rewrite it. *Example: See* x4 - y4 *as* (x2)2 - (y2)2, *thus recognizing it as a difference of squares that can be factored as* (x2 - y2)(x2 + y2).	2, 24, 25, 26, 27, 31, 32, 33, 34, 35, 36, 37, 156, 157, 158, 159, 160	21, 22, 23, 24, 25, 26, 27, 34, 35, 36, 37, 38, 39	Ch5, Ch6, Ch7, Ch8, Ch32	40, 41, 42, 61, 62, 118, 119		Ch13
6. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.	28, 29, 30, 31, 32	34, 35, 36, 37, 38, 39	Ch6, Ch8, Ch9			
a. Factor quadratic expressions with leading coefficients of one, and use the factored form to reveal the zeros of the function it defines.				80, 81, 162, 163, 164, 165, 166, 182, 183, 184, 185	80, 81, 158, 159, 160	Ch31, Ch32, Ch33, Ch34
b. Use the vertex form of a quadratic expression to reveal the maximum or minimum value and the axis of symmetry of the function it defines; complete the square to find the vertex form of quadratics with a leading coefficient of one.				165, 166, 167, 168, 169, 170, 171, 172, 173	166, 167, 168, 169, 170, 171	Ch31, Ch33

c. Use the properties of exponents to transform expressions for exponential functions. *Example: Identify percent rate of change in functions such as* y = (1.02)t, y = (0.97)t, y = (1.01)12t, y = (1.2)t/10, *and classify them as representing exponential growth or decay.*	101, 102, 103, 104, 105	102, 103, 104, 105	Ch21, Ch23, Ch31, Ch32	26, 28, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166	164, 165, 166, 167	
7. Add, subtract, and multiply polynomials, showing that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication. Finding solutions to an equation, inequality, or system of equations or inequalities requires the checking of candidate solutions, whether generated analytically or graphically, to ensure that solutions are found and that those found are not extraneous.	38, 39, 40, 41, 42, 43, 53, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 6, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85,, 86, 87, 88, 89, 90, 81, 82, 83, 94, 95, 96, 97, 98, 99, 100, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 142, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180	39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 59, 60, 61, 62, 63, 64, 65, 6, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 79, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 81, 82, 83, 94, 95, 96, 97, 98, 99, 100, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 130, 131, 132, 134, 135, 136, 137, 138, 139, 140, 141, 142, 142, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180	Ch3, Ch4, Ch8, Ch9, Ch11, Ch12,Ch13, Ch14, Ch15, Ch18, Ch22, Ch23, Ch29, Ch31			
8. Explain why extraneous solutions to an equation involving absolute values may arise and how to check to be sure that a candidate solution satisfies an equation. The structure of an equation or inequality (including, but not limited to, one-variable linear and quadratic equations, inequalities, and systems of linear equations in two variables) can be purposefully analyzed (with and without technology) to determine an efficient strategy to find a solution, if one exists, and then to justify the solution.				110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124	25, 26, 27, 33, 38, 39	
9. Select an appropriate method to solve a quadratic equation in one variable.						
a. Use the method of completing the square to transform any quadratic equation in x into an equation of the form (x - p)2 = q that has the same solutions. Explain how the quadratic formula is derived from this form.						
b. Solve quadratic equations by inspection (such as x2 = 49), taking square roots, completing the square, the quadratic formula, and factoring, as appropriate to the initial form of the equation, and recognize that some solutions may not be real.				181, 182, 183, 184	181, 182, 183, 184	Ch31, Ch32

10. Select an appropriate method to solve a system of two linear equations in two variables.				100, 101, 102, 103, 104, 105, 105, 107, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124	74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 110, 111, 112, 113, 114, 115	Ch17, Ch18, Ch20
a. Solve a system of two equations in two variables by using linear combinations; contrast situations inwhich use of linear combinations is more efficient with those in which substitution is more efficient.						
b. Contrast solutions to a system of two linear equations in two variables produced by algebraic methods with graphical and tabular methods. Expressions, equations, and inequalities can be used to analyze and make predictions, both within mathematics and as mathematics is applied in different contexts - in particular, contexts that arise in relation to linear, quadratic, and exponential situations.				100, 101, 102, 103, 104, 105, 105, 107, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124	74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 110, 111, 112, 113, 114, 115	Ch17, Ch18, Ch20
11. Create equations and inequalities in one variable and use them to solve problems in context, either exactly or approximately. Extend from contexts arising from linear functions to those involving quadratic, exponential, and absolute value functions.	54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 75, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 113, 114, 115, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180	46, 47, 48, 49, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99	Ch 12, Ch 13, Ch23, Ch28, Ch32			
12. Create equations in two or more variables to represent relationships between quantities in context; graph equations on coordinate axes with labels and scales and use them to make predictions. Limit to contexts arising from linear, quadratic, exponential, absolute value, and linear piecewise functions.				38, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 93		Ch16, Ch17, Ch18, Ch20
13. Represent constraints by equations and/or inequalities, and solve systems of equations and/or inequalities, interpreting solutions as viable or nonviable options in a modeling context. Limit to contexts arising from linear, quadratic, exponential, absolute value, and linear piecewise functions.						
Focus 2: Connecting Algebra to Functions						

14. Given a relation defined by an equation in two variables, identify the graph of the relation as the set of all its solutions plotted in the coordinate plane. *Note: The graph of a relation often forms a curve (which could be a line).*				44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 100, 101, 102, 103, 104, 105, 106, 107	44, 45, 47, 48, 49, 50, 52, 53, 54, 56, 57, 58, 59, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 100, 101, 102, 103, 104, 105, 106, 107	Ch23, Ch24
15. Define a function as a mapping from one set (called the domain) to another set (called the range) that assigns to each element of the domain exactly one element of the range.				27, 28, 29, 30, 31	27, 28, 29, 31, 32	Ch6, Ch7
a. Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. Note: If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x.				27, 28, 29, 30, 31	27, 28, 29, 31, 32	Ch6, Ch7
b. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. Limit to linear, quadratic, exponential, and absolute value functions.				27, 28	27, 28, 30	Ch9, Ch14
16. Compare and contrast relations and functions represented by equations, graphs, or tables that show related values; determine whether a relation is a function. Explain that a function f is a special kind of relation defined by the equation y = f(x).				27, 28	27, 28, 30	Ch9, Ch14
17. Combine different types of standard functions to write, evaluate, and interpret functions in context. Limit to linear, quadratic, exponential, and absolute value functions.				44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 100, 101, 102, 103, 104, 105, 106, 107, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124	25, 26, 27, 33, 38, 39, 44, 45, 47, 48, 49, 50, 52, 53, 54, 56, 57, 58, 59, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 100, 101, 102, 103, 104, 105, 106, 107, 121, 122, 123, 124, 125	Ch16, Ch17, Ch20, Ch23, Ch24
a. Use arithmetic operations to combine different types of standard functions to write and evaluate functions. *Example: Given two functions, one representing flow rate of water and the other representing evaporation of that water, combine the two functions to determine the amount of water in a container at a given time.*				38, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 93		Ch16, Ch17, Ch18, Ch20

b. Use function composition to combine different types of standard functions to write and evaluate functions.				44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 100, 101, 102, 103, 104, 105, 106, 107, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124	25, 26, 27, 33, 38, 39, 44, 45, 47, 48, 49, 50, 52, 53, 54, 56, 57, 58, 59, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 100, 101, 102, 103, 104, 105, 106, 107, 121, 122, 123, 124, 125	Ch16, Ch17, Ch20, Ch23, Ch24
18. Solve systems consisting of linear and/or quadratic equations in two variables graphically, using technology where appropriate.				100, 101, 102, 103, 104, 105, 106, 107	74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 110, 111, 112, 113, 114, 115	Ch33
19. 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).				110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124	25, 26, 27, 33, 38, 39	
a. Find the approximate solutions of an equation graphically, using tables of values, or finding successive approximations, using technology where appropriate. *Note: Include cases where f(x) is a linear, quadratic, exponential, or absolute value function and g(x) is constant or linear.*						
20. Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes, using technology where appropriate.				120, 121, 122, 123, 124	121, 122, 123, 124, 125	Ch16, Ch17, Ch20, Ch24
Focus 3: Functions						
21. Compare properties of two functions, each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). Extend from linear to quadratic, exponential, absolute value, and general piecewise.				44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 100, 101, 102, 103, 104, 105, 106, 107	44, 45, 47, 48, 49, 50, 52, 53, 54, 56, 57, 58, 59, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 100, 101, 102, 103, 104, 105, 106, 107	Ch23, Ch24
22. Define sequences as functions, including recursive definitions, whose domain is a subset of the integers.				27, 28, 30	27, 29	Ch6, Ch7

a. Write explicit and recursive formulas for arithmetic and geometric sequences and connect them to linear and exponential functions. *Example: A sequence with constant growth will be a linear function, while a sequence with proportional growth will be an exponential function.*				27, 28, 30	27, 29	Ch6, Ch7
23. Identify the effect on the graph of replacing f(x) by f(x)+k,k·f(x), f(k·x), and f(x+k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and explain the effects on the graph, using technology as appropriate. Limit to linear, quadratic, exponential, absolute value, and linear piecewise functions.				27, 28, 29, 30, 31	27, 28, 29, 31, 32	Ch6, Ch7
24. Distinguish between situations that can be modeled with linear functions and those that can be modeled with exponential functions.	54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 75, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 113, 114, 115, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180	46, 47, 48, 49, 51 , 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99	Ch12, Ch13, Ch23, Ch28, Ch32			
a. Show that linear functions grow by equal differences over equal intervals, while exponential functions grow by equal factors over equal intervals.	54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 75, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 113, 114, 115, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180	46, 47, 48, 49, 51 , 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99	Ch12, Ch13, Ch23, Ch28, Ch32			

b. Define linear functions to represent situations in which one quantity changes at a constant rate per unit interval relative to another.	54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 75, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 113, 114, 115, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180	46, 47, 48, 49, 51 , 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99	Ch12, Ch13, Ch23, Ch28, Ch32			
c. Define exponential functions to represent situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 75, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 113, 114, 115, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180	46, 47, 48, 49, 51 , 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99	Ch12, Ch13, Ch23, Ch28, Ch32			
25. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).				100, 101, 102, 103, 104, 105, 106, 107, 120, 121, 122, 123, 124	74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 110, 111, 112, 113, 114, 115	
26. Use graphs and tables to show that a quantity increasing exponentially eventually exceeds a quantity increasing linearly or quadratically.						
27. Interpret the parameters of functions in terms of a context. Extend from linear functions, written in the form mx + b, to exponential functions, written in the form abx. *Example: If the function V(t) = 19885(0.75)t describes the value of a car after it has been owned for t years, 1985 represents the purchase price of the car when t = 0, and 0.75 represents the annual rate at which its value decreases.*				18, 19, 20, 21, 27, 28, 38, 39, 40, 41, 42, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 64, 65, 66, 67, 68	10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 30, 38, 41, 42, 43, 44, 45, 46, 48, 49, 50, 52, 53, 54, 56, 57, 58, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88	Ch2, Ch3, Ch4, Ch10, Ch11, Ch16, Ch17, Ch18, Ch19

28. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Note: Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; maximums and minimums; symmetries; and end behavior. Extend from relationships that can be represented by linear functions to quadratic, exponential, absolute value, and linear piecewise functions.				18, 19, 20, 21, 27, 28, 38, 39, 40, 41, 42, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 64, 65, 66, 67, 68	10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 30, 38, 41, 42, 43, 44, 45, 46, 48, 49, 50, 52, 53, 54, 56, 57, 58, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88	Ch2, Ch3, Ch4, Ch10, Ch11, Ch16, Ch17, Ch18, Ch19
29. 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. Limit to linear, quadratic, exponential, and absolute value functions.				27, 28, 58, 64, 65, 66, 67, 68, 69, 70, 71, 84, 85	27, 28, 29	Ch9, Ch10, Ch11, Ch12
30. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.						
a. Graph linear and quadratic functions and show intercepts, maxima, and minima.						
b. Graph piecewise-defined functions, including step functions and absolute value functions.						
c. Graph exponential functions, showing intercepts and end behavior.						
31. Use the mathematical modeling cycle to solve real-world problems involving linear, quadratic, exponential, absolute value, and linear piecewise functions.						
Data Analysis, Statistics, and Probability						
Focus 1: Quantitative Literacy						
32. Use mathematical and statistical reasoning with bivariate categorical data in order to draw conclusions and assess risk.						Ch26
33. Design and carry out an investigation to determine whether there appears to be an association between two categorical variables, and write a persuasive argument based on the results of the investigation.						Ch24, Ch25, Ch26, Ch27, Ch28
Focus 2: Visualizing and Summarizing Data						

34. Distinguish between quantitative and categorical data and between the techniques that may be used for analyzing data of these two types. *Example: The color of cars is categorical and so is summarized by frequency and proportion for each color category, while the mileage on each car's odometer is quantitative and can be summarized by the mean.*						Ch24, Ch25, Ch26, Ch27, Ch28
35. Analyze the possible association between two categorical variables.						Ch24, Ch25, Ch26, Ch27, Ch28
a. Summarize categorical data for two categories in two-way frequency tables and represent using segmented bar graphs.						Ch24, Ch25, Ch26, Ch27, Ch28
b. Interpret relative frequencies in the context of categorical data (including joint, marginal, and conditional relative frequencies).						Ch24, Ch25, Ch26, Ch27, Ch28
c. Identify possible associations and trends in categorical data.						Ch24, Ch25, Ch26, Ch27, Ch28
36. Generate a two-way categorical table in order to find and evaluate solutions to real-world problems.						
a. Aggregate data from several groups to find an overall association between two categorical variables.						
b. Recognize and explore situations where the association between two categorical variables is reversed when a third variable is considered (Simpson's Paradox).						
Focus 4: Probability						
37. Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").						
38. Explain whether two events, A and B, are independent, using two-way tables or tree diagrams.						
39. Compute the conditional probability of event A given event B, using two-way tables or tree diagrams.						
40. Recognize and describe the concepts of conditional probability and independence in everyday situations and explain them using everyday language. *Example: Contrast the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.*						Ch24, Ch25, Ch26, Ch27, Ch28

41. Explain why the conditional probability of A given B is the fraction of B's outcomes that also belong to A, and interpret the answer in context. *Example: the probability of drawing a king from a deck of cards, given that it is a face card, is (4/52)/(12/52), which is 1/3.*						