Six Weeks 1

Algebra I— Six-Weeks-At-a-Glance (2016-2017)

Unit 1: Graphs & Key Features, 5 days				SE Focus (refer to unit documents)
● A.3B - calculate the rate of change of a linear function represented tabularly, graphically, or algebraically in context of mathematical and real-world problems.	**● A.3C - graph linear functions on the coordinate plane and identify key features, including *x*-intercept, *y*-intercept, zeros and slope in mathematical and real-world problems.**	**● A.7A - graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including *x*-intercept, *y*-intercept, zeros, maximum value, minimum value, vertex and the equation of the axis of symmetry**	**● A.9D - graph exponential functions that model growth and decay and identify key features, including y-intercept and asymptote, in mathematical and real-world problems.**	● This first unit is focused on key features of graphs including but not limited to linear, quadratic and exponential functions ● Rate of change is included as a review of 8th grade material

Unit 2: Functions, Domain & Range, 8 days			SE Focus (refer to unit documents)
● A.2A - determine the domain & range of a linear function in problems; determine reasonable domain and range values for real world situations, both continuous and discrete; and represent domain & range using inequalities		**● A.6A - determine the domain and range of quadratic functions and represent the domain and range using inequalities**	● This is following the introduction of all parent functions covered in Algebra 1. Domain & Range is introduced here and then spiraled in throughout the rest of the year as the function families are taught.
● A.12A - decide whether relations represented verbally, tabularly, graphically, and symbolically define a function	● A.12B - evaluate functions, expressed in function notation, given one or more elements in their domains	● A.9A - determine the domain and range of exponential functions of the form $f(x) = ab^x$ and represent the domain and range using inequalities	

© PasadenaISD

Six Weeks 1

Algebra I— Six-Weeks-At-a-Glance (2016-2017)

PASADENA INDEPENDENT SCHOOL DISTRICT MATHEMATICS

Unit 3: Transformations, 5 days		SE Focus
● **A.3E - determine the effects on the graph of the parent function $f(x) = x$ when $f(x)$ is replaced by $af(x)$, $f(x) + d$, $f(x-c)$, $f(bx)$ for specific values of a, b, c and d.**	● **A.7C - determine the effects on the graph of the parent function $f(x) = x^2$ when $f(x)$ is replaced by $af(x)$, $f(x) + d$, $f(x-c)$, $f(bx)$ for specific values of a, b, c and d.**	● This unit ties all transformations together graphically and algebraically (using function notation).
28 days: 18 days—instruction, 2 days—policies & procedures, 2 days—technology, 6 days— review, enrich, reteach, assess		

© PasadenaISD

Six Weeks 2

Algebra I— Six-Weeks-At-a-Glance (2016-2017)

Unit 4: Solve Equations & Inequalities, 6 days				SE Focus (refer to unit documents)
● A.5A - solve linear equations in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides				
● A.5B - solve linear inequalities in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides		● A.12E - solve mathematic and scientific formulas, and other literal equations, for a specified variable		

Unit 5: Simplifying Expressions, 13 days				SE Focus (refer to unit documents)
● A.10A - add and subtract polynomials of degree one and degree two	**● A.10D - rewrite polynomial expressions of degree one and degree two in equivalent forms using the distributive property**	**● A.11A - simplify numerical radical expressions involving square roots**	**● A.11B - simplify numeric and algebraic expressions using the laws of exponents, including integral and rational exponents**	

23 days: 19 days—instruction, 4 days—review, enrich, reteach, assess)

© PasadenaISD

Six Weeks 3

Algebra I— Six-Weeks-At-a-Glance (2016-2017)

Unit 6: Quadratic Expressions , 14 days		SE Focus (refer to unit documents)
● **A.10B - multiply polynomials of degree one and degree two**	● A.10E - factor, if possible, trinomials with real factors in the form $ax^2 + bx + c$, including perfect square trinomials of degree two	
● A.10C - determine the quotient of a polynomial of degree one and polynomial of degree two when divided by a polynomial of degree one and polynomial of degree two when the degree of the divisor does not exceed the degree of the dividend	● A.10D - rewrite polynomial expressions of degree one and degree two in equivalent forms using the distributive property	
23 days: 14 days—instruction, 9 days—review, enrich, reteach, assess)		

© PasadenaISD

Six Weeks 4

Algebra I— Six-Weeks-At-a-Glance (2016-2017)

PASADENA INDEPENDENT SCHOOL DISTRICT MATHEMATICS

Unit 7: Solve Quadratic Equations, 6.5 days	SE Focus
● A.8A - solve quadratic equations having real solutions by factoring, taking square roots, completing the square, and applying the quadratic formula	
● A.10E - factor, if possible, trinomials with real factors in the form $ax^2 + bx + c$, including perfect square trinomials of degree two	
● A.10F - decide if a binomial can be written as the difference of two squares and, if possible, use the structure of a difference of two squares to rewrite the binomial	

Unit 8: Writing Quadratic Functions, 4 days			SE Focus
● A.6B - write equations of quadratic functions given the vertex and another point on the graph, write the equation in vertex form ($f(x) = a(x - h)^2 + k$), and rewrite the equation from vertex form to standard form ($f(x) = ax^2 + bx + c$)	● A.6C - write quadratic functions when given real solutions and graphs of their related equations	● A.7B - describe the relationship between the linear factors of quadratic expressions and the zeros of their associated quadratic functions	

Unit 9: Arithmetic Sequences, 4 days		SE Focus
A.12C - identify terms of arithmetic and geometric sequences when the sequences are given in function form using recursive processes	A.12D - write a formula for the nth term of arithmetic and geometric sequences, given the value of several of their terms	

© PasadenaISD

Six Weeks 4

Algebra I— Six-Weeks-At-a-Glance (2016-2017)

PASADENA INDEPENDENT SCHOOL DISTRICT MATHEMATICS

Unit 10: Writing Linear Equations, 9 days			SE Focus (refer to unit documents)
• **A.2C - write linear equations in two variables given a table of values, a graph, and a verbal description**			
A.3A - determine the slope of a line given a table of values, a graph, two points on the line, and an equation written in various forms, including $y = mx + b$, $Ax + By = C$, and $y - y_1 = m(x - x_1)$	A.2B - write linear equations in two variables in various forms, including $y = mx + b$, $Ax + By = C$, and $y - y_1 = m(x - x_1)$, given one point and the slope and given two points	A.2D - write and solve equations involving direct variation	
A.2E - write the equation of a line that contains a given point and is parallel to a given line	A.2F - write the equation of a line that contains a given point and is perpendicular to a given line	A.2G - write an equation of a line that is parallel or perpendicular to the X or Y axis and determine whether the slope of the line is zero or undefined	
31 days: 23.5 days—instruction, 6.5 days—review, enrich, reteach, assess)			

© PasadenaISD

Algebra I— Six-Weeks-At-a-Glance (2016-2017)

Six Weeks 5

Unit 11: Writing and Solving Systems, 7 days			**SE Focus** (refer to unit documents)
• A.2I - write systems of two linear equations given a table of values, a graph, and a verbal description	**• A.5C - solve systems of two linear equations with two variables for mathematical and real-world problems**		
	• A.3F - graph systems of two linear equations in two variables on the coordinate plane and determine the solutions if they exist	• A.3G - estimate graphically the solutions to systems of two linear equations with two variables in real-world problems	
Unit 12: Linear Inequalities, 5 days			**SE Focus** (refer to unit documents)
• A.2H - write linear inequalities in two variables given a table of values, a graph, and a verbal description	**• A.3D - graph the solution set of linear inequalities in two variables on the coordinate plane**		
	• A.3H - graph the solution set of systems of two linear inequalities in two variables on the coordinate plane		
Unit 13: Geometric Sequences, 2 days			**SE Focus** (refer to unit documents)
A.12C - identify terms of arithmetic and geometric sequences when the sequences are given in function form using recursive processes	A.12D - write a formula for the *n*th term of arithmetic and geometric sequences, given the value of several of their terms		
Unit 14: Writing & Interpret Exponential Functions, 4 days			**SE Focus** (refer to unit documents)
• A.9C - write exponential functions in the form $f(x) = ab^x$ (where b is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay	**A.9B - interpret the meaning of the values of a and b in exponential functions of the form $f(x) = ab^x$ in real -world problems**		

© PasadenaISD

Six Weeks 5

Algebra I— Six-Weeks-At-a-Glance (2016-2017)

Unit 15: Regressions, 6 days			SE Focus (refer to unit documents)
A.4C - write, with and without technology, linear functions that provide a reasonable fit to data to estimate solutions and make predictions for real-world problems	**A.8B - write, using technology, quadratic functions that provide a reasonable fit to data to estimate solutions and make predictions for real-world problems**	A.9E - write, using technology, exponential functions that provide a reasonable fit to data and make predictions for real-world problems	
A.4A - calculate, using technology, the correlation coefficient between two quantitative variables and interpret this quantity as a measure of the strength of the linear association			
A.4B - compare and contrast association and causation in real-world problems			
33 days: 24 days—instruction, 9 days—review, enrich, reteach, assess)			

© PasadenaISD