	1	st Semester				2nd Semester	r	
Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
(3 – 4 weeks)	(3 – 4 weeks)	(3 – 4 weeks)	(2 – 3 weeks)	(4 – 5 weeks)	(2 – 3 weeks)	(4 – 5 weeks)	(3 – 4 weeks)	(3 – 4 weeks
Introduction to	Trigonometric	Trigonometry	Trigonometric	Matrices	Conics	Vectors	Inferences &	Probability
Trigonometric	Functions	of General	Identities				Conclusions	
Functions		Triangles					from Data	
MGSE9-12.F.IF.4 MGSE9-12.F.IF.7 MGSE9-12.F.IF.7e MGSE9-12.F.TF.1 MGSE9-12.F.TF.2 MGSE9-12.F.TF.5 MGSE9-12.F.TF.8	MGSE9-12.F.BF.4 MGSE9-12.F.BF.4d MGSE9-12.F.TF.3 MGSE9-12.F.TF.4 MGSE9-12.F.TF.6 MGSE9-12.F.TF.7	MGSE.9-12.G.SRT.9 MGSE.9-12.G.SRT.10 MGSE.9-12.G.SRT.11	MGSE9-12.F.TF.9	MGSE9-12.N.VM.6 MGSE9-12.N.VM.7 MGSE9-12.N.VM.8 MGSE9-12.N.VM.9 MGSE9-12.N.VM.10 MGSE9-12.N.VM.12 MGSE9-12.A.REI.8 MGSE9-12.A.REI.9	MGSE9-12.G.GPE.2 MGSE9-12.G.GPE.3 MGSE9-12.A.REI.7	MGSE9-12.N.CN.3 MGSE9-12.N.CN.4 MGSE9-12.N.CN.5 MGSE9-12.N.CN.6 MGSE9-12.N.VM.1 MGSE9-12.N.VM.2 MGSE9-12.N.VM.4 MGSE9-12.N.VM.4 MGSE9-12.N.VM.4b MGSE9-12.N.VM.4c MGSE9-12.N.VM.5 MGSE9-12.N.VM.5a MGSE9-12.N.VM.5b MGSE9-12.N.VM.5b	MGSE9-12.S.ID.2 MGSE9-12.S.ID.4 MGSE9-12.S.IC.1 MGSE9-12.S.IC.2 MGSE9-12.S.IC.3 MGSE9-12.S.IC.4 MGSE9-12.S.IC.5 MGSE9-12.S.IC.6	MGSE9-12.S.CP MGSE9-12.S.CP MGSE9-12.S.MD MGSE9-12.S.MD MGSE9-12.S.MD MGSE9-12.S.MD MGSE9-12.S.MD MGSE9-12.S.MD MGSE9-12.S.MD MGSE9-12.S.MD
TE Malanai - Later	These units were w		ts will include the Ma *Prioritiz	thematical Practices a red Standards are noted	nd indicate skills to ma d in RED*	intain.		

Number and Quantity Strand: RN = The Real Number System, Q = Quantities, CN = Complex Number System, VM = Vector and Matrix Quantities

Algebra Strand: SSE = Seeing Structure in Expressions, APR = Arithmetic with Polynomial and Rational Expressions, CED = Creating Equations, REI = Reasoning with Equations and Inequalities

 $Functions \ Strand: IF = Interpreting \ Functions, \ LE = Linear \ and \ Exponential \ Models, \ BF = Building \ Functions, \ TF = Trigonometric \ Functions \ Strand: IF = Interpreting \ Functions, \ LE = Linear \ and \ Exponential \ Models, \ BF = Building \ Functions, \ TF = Trigonometric \ Functions \ Strand: \ Functions, \ TF = Trigonometric \ Functions, \ Strand: \ Functions, \ Functions, \ Strand: \ Functions, \ Strand: \ Functions, \ Strand: \ Functions, \ Functions,$

Geometry Strand: CO = Congruence, SRT = Similarity, Right Triangles, and Trigonometry, C = Circles, GPE = Expressing Geometric Properties with Equations, GMD = Geometric Measurement and Dimension, MG = Modeling with Geometry

Statistics and Probability Strand: ID = Interpreting Categorical and Quantitative Data, IC = Making Inferences and Justifying Conclusions, CP = Conditional Probability and the Rules of Probability, MD = Using Probability to Make Decisions

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Accelerated GSE Pre-Calculus Expanded Curriculum Map – 1 st Semester						
Standards for Mathematical Practice						
 Make sense of problems and persevere in solvi Reason abstractly and quantitatively. Construct viable arguments and critique the read Model with mathematics. 	ing them.	 5 Use appropriate tools strategically. 6 Attend to precision. 7 Look for and make use of structure. 8 Look for and express regularity in repeated reasoning. 				
	1 st Sei	mester				
Unit 1	Unit 2	Unit 3	Unit 4			
Introduction to Trigonometric	Trigonometric Functions	Trigonometry of General Triangles	Trigonometric Identities			
Functions						
Interpret functions that arise in applications in terms of the context MGSE9-12.F.IF.4 Using tables, graphs, and verbal descriptions, interpret the key characteristics of a function which models the relationship between two quantities. Sketch a graph showing key features including: intercepts; interval where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. Analyze functions using different representations MGSE9-12.F.IF.7 Graph functions expressed algebraically and show key features of the graph both by hand and by using technology. MGSE9-12.F.IF.7e Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions using the unit circle MGSE9-12.F.TF.1 Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle. MGSE9-12.F.TF.2 Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle. MGSE9-12.F.TF.5 Choose trigonometric functions to model periodic phenomena with trigonometric functions MGSE9-12.F.TF.8 Prove the Pythagorean identity (sin A) ² + (cos A) ² = 1 and use it to find sin A, cos A, or tan A, given sin A, cos A, or tan A, and the quadrant of the angle.	Build new functions from existing functions MGSE9-12.F.BF.4 Find inverse functions. MGSE9-12.F.BF.4d Produce an invertible function from a non-invertible function by restricting the domain. MGSE9-12.F.TF.3 Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosine, and tangent for $\pi - x$, $\pi + x$, and $2\pi - x$ in terms of their values for x, where x is any real number. MGSE9-12.F.TF.4 Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions. MGSE9-12.F.TF.6 Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed. MGSE9-12.F.TF.7 Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.	Apply trigonometry to general triangles MGSE9-12.G.SRT.9 Derive the formula A = (1/2)ab sin(C) for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side. MGSE9-12.G.SRT.10 Prove the Laws of Sines and Cosines and use them to solve problems. MGSE9-12.G.SRT.11 Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).	Prove and apply trigonometric identities MGSE9-12.F.TF.9 Prove addition, subtraction, double and half-angle formulas for sine, cosine, and tangent and use them to solve problems.			
Accelerated GSE Pre-Calculus Expanded Curriculum Map – 2 nd Semester						

Standards for Mathematical Practice

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use matrices in applications MGSE9-12.N.VM.6 Use matrices to represent and manipulate data, e.g., transformations of vectors.description and the equation for a conic sectionirrati MGSEMGSE9-12.N.VM.7 Multiply matrices by scalars to produce new matrices.MGSE9-12.G.GPE.2 Derive the equation of a parabola given a focus and directrix.of a c to fin quotiMGSE9-12.N.VM.8 Add, subtract, and multiply matrices of appropriate dimensions.MGSE9-12.G.GPE.3 Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributiveSolve systems of equations MGSE9-12.A.REL7 Solve a simpleirrati mitration for a conic section	8 Look for and ex 2 nd Semester Unit 7 Vectors properties of rational and tional numbers		Unit 9
3 Construct viable arguments and critique the reasoning of others. 4 Model with mathematics. Unit 5 Unit 6 Matrices Conics Perform operations on matrices and use matrices in applications Translate between the geometric description and the equation for a conic section Use prima piration of a parabola given a focus and directrix. MGSE9-12.N.VM.6 Use matrices. by scalars to produce new matrices. MGSE9-12.N.VM.7 Multiply matrices of appropriate dimensions. MGSE9-12.G.GPE.2 Derive the equation of a parabola given a focus and directrix. MGSE9-12.G.GPE.3 Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant. MGSE9-12.N.VM.9 Understand that, unlike multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive Matrices of equations of ellipses and hyperbolas form the foci is constant. MGSE9-12.A.REL7 Solve a simple	7 Look for and ma 8 Look for and ex 2 nd Semester Unit 7 Vectors properties of rational and tional numbers	ake use of structure. press regularity in repeated reasoning. Unit 8 Inferences & Conclusions	
4 Model with mathematics.Unit 5Unit 6MatricesConicsPerform operations on matrices and use matrices in applications MGSE9-12.N.VM.6 Use matrices to represent and manipulate data, e.g., transformations of vectors.Translate between the geometric description and the equation for a conic sectionUse p irrati MGSE9-12.N.VM.7 Multiply matrices by scalars to produce new matrices.MGSE9-12.N.VM.7 Multiply matrices dimensions.MGSE9-12.N.VM.9 Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributiveMatrices to state conic sectionUse p irrations description and the equation for a conic sectionUse p irrations description and the equation for a conic sectionMGSE9-12.N.VM.9 Understand that, unlike multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributiveSolve systems of equations mGSE9-12.A.REL7 Solve a simpleNGSE9-12.A.REL7 Solve a simple	8 Look for and ex 2 nd Semester Unit 7 Vectors properties of rational and tional numbers	press regularity in repeated reasoning. Unit 8 Inferences & Conclusions	
Unit 5Unit 6MatricesConicsPerform operations on matrices and use matrices in applications MGSE9-12.N.VM.6 Use matrices to represent and manipulate data, e.g., transformations of vectors.Translate between the geometric description and the equation for a conic sectionUse I irrati description and the equation for a description and the equation for a domic sectionMGSE9-12.N.VM.6 Use matrices by scalars to produce new matrices.Translate between the geometric description and the equation for a conic sectionUse I irrati description and the equation for a 	2 nd Semester Unit 7 Vectors properties of rational and tional numbers	Unit 8 Inferences & Conclusions	
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use matrices in applicationsMGSE9-12.N.VM.6 Use matrices to represent and manipulate data, e.g., transformations of vectors.description and the equation for a conic sectionirrati 	tional numbers	from Data	Probability
use matrices in applicationsMGSE9-12.N.VM.6 Use matrices to represent and manipulate data, e.g., transformations of vectors.description and the equation for a conic sectionirrati MGSEMGSE9-12.N.VM.7 Multiply matrices by scalars to produce new matrices.description and the equation for a conic sectionirrati MGSEMGSE9-12.N.VM.7 Multiply matrices by scalars to produce new matrices.description and the equation for a conic sectionirrati MGSEMGSE9-12.N.VM.8 Add, subtract, and multiply matrices of appropriate dimensions.description and the equation for a parabola given a focus and directrix.irrati MGSE9-12.G.GPE.2 Derive the equation of a parabola given a focus and directrix.irrati MGSE9-12.G.GPE.2 Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.irrati MGSESolve systems of equations MGSE9-12.A.REL7 Solve a simpleforms	tional numbers	n un Data	
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represent and manipulate data, e.g., transformations of vectors.Content vectors.MGSE9-12.N.VM.7 Multiply matrices by scalars to produce new matrices.MGSE9-12.G.GPE.2 Derive the equation of a parabola given a focus and directrix.of a c to fin quoti multiply matrices of appropriate dimensions.MGSE9-12.N.VM.8 Add, subtract, and multiplication of numbers, matrix multiplication of numbers, matrix a commutative operation, but still satisfies the associative and distributiveMGSE9-12.A.REL7 Solve a simpleof a c to fin quoti Beyon or a commutative operation, but still satisfies the associative and distributive		data on a single count or measurement	probabilities of compound events in a
transformations of vectors.MGSE9-12.G.GPE.2 Derive theto finMGSE9-12.N.VM.7 Multiply matricesequation of a parabola given a focus and directrix.to finMGSE9-12.N.VM.8 Add, subtract, and multiply matrices of appropriate dimensions.MGSE9-12.G.GPE.3 Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.mumber multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributiveMGSE9-12.A.REL7 Solve a simpleto finMGSE9-12.N.VM.9Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributiveSolve systems of equations MGSE9-12.A.REL7 Solve a simpleto fin	SE9-12.N.CN.3 Find the conjugate	<u>variable</u>	uniform probability model
MGSE9-12.N.VM.7 Multiply matrices by scalars to produce new matrices.equation of a parabola given a focus and directrix.quoti ReprMGSE9-12.N.VM.8 Add, subtract, and multiply matrices of appropriate dimensions.MGSE9-12.G.GPE.3 Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.munt rectant rectant real a formsMGSE9-12.N.VM.9 Understand that, unlike multiplication of numbers, matrix a commutative operation, but still satisfies the associative and distributiveMGSE9-12.A.REL7 Solve a simplemuttiple	complex number; use the conjugate	MGSE9-12.S.ID.2 Use statistics	MGSE9-12.S.CP.8 Apply the general
MGSE9-12.N.VM.8 Add, subtract, and multiply matrices of appropriate dimensions.directrix.Repr opera opera given the foci, using the fact that the sum or difference of distances from the foci is constant.Repr opera opera multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributiveMGSE9-12.G.GPE.3 Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.Repr opera opera given the foci, using the fact that the sum or difference of distances from the foci is constant.ReprSolve systems of equations mGSE9-12.A.REL7 Solve a simpleMGSE9-12.A.REL7 Solve a simpleFormation of the simple	nd the absolute value (modulus) and	appropriate to the shape of the data	Multiplication Rule in a uniform
MGSE9-12.N.VM.8 Add, subtract, and multiply matrices of appropriate dimensions.MGSE9-12.G.GPE.3 Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.MGSE9-12.N.VM.9 rectar real a explaMGSE9-12.N.VM.9 Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributiveMGSE9-12.A.REL7 Solve a simpleMGSE9-12.A.REL7 represent the sum represent the sum or difference of distances from the foci is constant.	ient of complex numbers.	distribution to compare center (median,	probability model, $P(A \text{ and } B) =$
multiply matrices of appropriate dimensions.equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.MGSMGSE9-12.N.VM.9 Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributiveequations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.MGS MGSESolve systems of equations mGSE9-12.A.REL7 Solve a simpleforms repre	resent complex numbers and their rations on the complex plane	mean) and spread (interquartile range, mean absolute deviation, standard	[P(A)]x[P(B A)] = [P(B)]x[P(A B)], and
dimensions.given the foci, using the fact that the sum or difference of distances from the foci is a commutative operation, but still satisfies the associative and distributivegiven the foci, using the fact that the sum or difference of distances from the foci is constant.numb rectau 	SE9-12.N.CN.4 Represent complex	deviation) of two or more different data	interpret the answer in terms of the model.
MGSE9-12.N.VM.9 Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributiveor difference of distances from the foci is constant.rectau real a explaSolve systems of equations MGSE9-12.A.REL7 Solve a simpleforms repre	bers on the complex plane in	sets.	MGSE9-12.S.CP.9 Use permutations
unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributiveof unference of distances from the forms real a constant.real a expla forms represented of distances from the forms represented of distances fro	ingular and polar form (including	MGSE9-12.S.ID.4 Use the mean and	and combinations to compute
multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributiveconstant. Solve systems of equations MGSE9-12.A.REL7 Solve a simpleexpla forms repre	and imaginary numbers), and	standard deviation of a data set to fit it to	probabilities of compound events and
satisfies the associative and distributive MGSE9-12.A.REI.7 Solve a simple repre	ain why the rectangular and polar	a normal distribution and to estimate	solve problems.
subside us social ve and distributive	is of a given complex number	population percentages. Recognize that	Calculate expected values and use
	esent the same number.	there are data sets for which such a	them to solve problems
	SE9-12.N.CN.5 Represent addition,	procedure is not appropriate. Use	MGSE9-12.S.MD.1 Define a random
	raction, multiplication, and	calculators, spreadsheets, and tables to	variable for a quantity of interest by
	ugation of complex numbers	estimate areas under the normal curve.	assigning a numerical value to each
in mauni addition and maniphotation	netrically on the complex plane; use erties of this representation for	<u>Understand and evaluate random</u> processes underlying statistical	event in a sample space; graph the corresponding probability distribution
F-F	putation. For example, $(-1 + \sqrt{3}i)^3 =$	experiments	using the same graphical displays as for
	cause $(-1 + \sqrt{3}i)$ has modulus 2 and	MGSE9-12.S.IC.1 Understand statistics	data distributions.
	$ment 120^{\circ}$.	as a process for making inferences about	MGSE9-12.S.MD.2 Calculate the
	SE9-12.N.CN.6 Calculate the	population parameters based on a	expected value of a random variable;
matrices as transformations of the plane, distant	nce between numbers in the	random sample from that population.	interpret it as the mean of the probability
	plex plane as the modulus of the	MGSE9-12.S.IC.2 Decide if a specified	distribution.
	rence, and the midpoint of a	model is consistent with results from a	MGSE9-12.S.MD.3 Develop a
	nent as the average of the numbers at	given data-generating process, e.g., using	probability distribution for a random
	ndpoints. resent and model with vector	simulation. For example, a model says a spinning coin falls heads up with	variable defined for a sample space in which theoretical probabilities can be
	ntities.	probability 0. 5. Would a result of 5 tails	calculated; find the expected value. For
	SE9-12.N.VM.1 Recognize vector	in a row cause you to question the	example, find the theoretical probability
	tities as having both magnitude and	model?	distribution for the number of correct
	ction. Represent vector quantities by	Make inferences and justify	answers obtained by guessing on all five
	cted line segments, and use	conclusions from sample surveys,	questions of a multiple-choice test where
	opriate symbols for vectors and their	experiments, and observational studies	each question has four choices, and find
	nitudes (e.g., v , $ v $, $ v $, v).	MGSE9-12.S.IC.3 Recognize the	the expected grade under various
	SE9-12.N.VM.2 Find the	purposes of and differences among	grading schemes.
comp	ponents of a vector by subtracting	sample surveys, experiments, and	MGSE9-12.S.MD.4 Develop a
	coordinates of an initial point from		much chility distribution for a model
		observational studies; explain how	probability distribution for a random
	coordinates of a terminal point.	randomization relates to each.	variable defined for a sample space in
	coordinates of a terminal point. SE9-12.N.VM.3 Solve problems	randomization relates to each. MGSE9-12.S.IC.4 Use data from a	variable defined for a sample space in which probabilities are assigned
	coordinates of a terminal point.	randomization relates to each.	variable defined for a sample space in

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Perform operations on vectors MCSE9-12.NVMA Add ad subtrat vectors. MCSE9-12.NVMA Add vectors edu to-end. component-wise, and by tubes aparallelogram rule. Understand that magnitude of a sum of two nagnitudes magnitude of a direction form, determine the magnitude and direction for is the addue interse of with the te apposite direction. Reposent scalar, MCSE9-12.N.NM.SA Represent scalar multiplication graphically by covering their direction arganical to direction of component-wise, edu, sc., tr., b) = (cw, c., cv,). MCSE9-12.N.NM.SA Represent scalar multiplication graphically by covering their direction of a cir is either align ty (for c > 0) or against r (for c < 0) or against r (for c < 0) or against v (for c < 0) or<	 	Digita Department of Educat		
 vectors. MGSE9-12.N.VM4 Add vectors of to -ond, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitude of a sum of two vectors. MGSE9-12.N.VM4 Guberstand vectors and direction form, determine the magnitude and direction form, determine the magnitude and direction form. MGSE9-12.N.VM4 Understand vectors and their sum. MGSE9-12.N.VM4 Understand vectors are updated to the sum of the magnitude and direction form, determine the magnitude and direction form, determine the magnitude and direction form, determine the ways + (-w), where (-w) is the additive inverse of w, with the same magnitude as w and pointing in the opposite direction. Represent scalar multiplication component-wise, e.g., as c(v_x, v_y) = (v_x, v_y). MGSE9-12.N.VM.SB Parasent scalar multiplication component-wise, e.g., as c(v_x, v_y) = (v_x, v_y). MGSE9-12.N.VM.SD Compute the magnitude parameters are signification of c v is either along v (cro < 0) or against v (for c < 0). MGSE9-12.N.VM.SD Compute the direction of c is either along v (cro < 0) or against v (for c < 0). MGSE9-12.N.VM.SD Compute the direction of c is either along v (cro < 0) or against v (for c < 0). MGSE9-12.N.VM.SD Compute the direction of c vis either along v (cro < 0) or against v (for c < 0). MGSE9-12.N.VM.SD Compute the direction of c vis the magnitude of a sular multiplication or c > 0. MGSE9-12.N.VM.SD Compute the direction of c vis the with m (k) = 0, the direction of c vis the magnitude vector. Work with the same fair decisions (e.g., product testing, medical design and vis the direction of c vis the magnitude vector). MGSE9-12.N.VM.SD Compute the direction of c vis the magnitude vector. Work with the same vector. Wor				
MGSE9-12.N.VM4 add vectors end- to-end, component-wise, and by the magnitude of a sum of two vectors is typically not the sum of two vectors is 				
 to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is tryicelly not the sum of the magnitude and direction form, determine the magnitude and direction form, determine the magnitude and direction of their sum. MGSE9-12.XIVM6 (Understand vector subtraction <i>P</i> as <i>P</i> + (<i>A</i>), where (<i>aw</i>) is the additive inverse of <i>P</i>, where (<i>aw</i>) is the additive i				
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$ \begin{array}{ c } MGSE9-12.NVM4b Given two vectors in magnitude and direction of their sum. evaluation form, determine the magnitude and direction of their sum. MGSE9-12.NVM4c Understand vectors subtraction r = w s + (-w), where (-w) is the additive inverse of w, with the same magnitude as w and pointing in the opposite direction. Represent vector subtraction component-wise. MGSE9-12.NVM.5 thuilpty a vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction graphically by scalar. MGSE9-12.NVM.5 are Represent scalar multiplication graphically by scalar. MGSE9-12.NVM.5 thuilpty a vector is produce another vector. Work with the magnitude of a saturation of c v, v > = (cv_x, cv_y) = (cv_x, cv$				
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