

# PREFACE TO MATH ANALYSIS

During the **first five days** the Algebra II concepts listed below should be reviewed. The page numbers from the Prerequisites chapter in our Math Analysis book, Precalculus, McDougal Littell, 1997, are intended to serve as a guide for the review.

1. Multiplying Binomials and Trinomials. . . . .Page 27
2. Factoring Difference of Squares. . . . . Pages 31-34
3. Factoring Quadratic Trinomials. . . . .Pages 31-34
4. Solving Quadratic Equations. . . . .Pages 52-60
5. Simplifying Square Roots. . . . . Pages 16-22

## Math Analysis: Equations and Inequalities

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
											I	E		M	
<b>District Objective</b> *Solve absolute value equations.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I A, B		<b>Quarter</b> I <b>No. Days</b> 2	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 313-314		
<b>Text Correlation</b> P-5, 60-61							<b>Rating</b> 2		<b>Additional Resources</b> Absolute Value Activity						
<b>Assessment</b>  1. (ACT) For all pairs of real numbers, $a$ and $b$ , which of the following expressions are equal? I. $ a + b $ II. $ a  +  b $ III. $ -a - b $  (a) I and II only   (b) I and III only                      (c) II and III only (d) I, II, and III                      (e) No pair of the expressions will always be equal.  2. (District) Use a graphing utility to graph $y =  2x + 1  - 3$ .															

<b>Math Analysis: Functions and Relations</b>																
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal	
										I	E	M				
<b>District Objective</b> Identify special characteristics of circles from their equation (e.g., the center of a circle).												<b>PASS Process Standard</b> V B, C		<b>Quarter</b> I <b>No. Days</b> 1		
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP																
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 314-315			
<b>II. Functions and Relations (Algebra II)</b> F. Identify, graph, and write the equations of the <b>conic sections</b> .																
<b>Text Correlation</b> 1.1, Pg. 111						<b>Rating</b> 1		<b>Additional Resources</b>								
<b>Assessment</b>																
<p>1. (District) Find the standard form of the equation of the circle with center: (-3, 4) and radius: 6.</p> <p>2. (ACT) Which of the following is an equation of the circle in the standard (x, y) coordinate plane below?</p> <p>(a) <math>(x - 3)^2 + (y + 3)^2 = \sqrt{3}</math></p> <p>(b) <math>(x + 3)^2 + (y - 3)^2 = 6</math></p> <p>(c) <math>(x - 3)^2 + (y + 3)^2 = 6</math></p> <p>(d) <math>(x + 3)^2 + (y - 3)^2 = 9</math></p> <p>(e) <math>(x - 3)^2 + (y + 3)^2 = 9</math></p>																

# Math Analysis: Functions and Relations

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
									I	E	E	M			
<b>District Objective</b> *Determine the rate of change between two points of a function (slope).  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> III A V C		<b>Quarter</b> I <b>No. Days</b> 1	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input checked="" type="radio"/> AP															
<b>PASS Objective</b> The student will... <b>II. Functions and Relations (Algebra I)</b> D. Find the slope of a line given: <ol style="list-style-type: none"> <li>1. the graph of the line</li> <li>2. an equation of the line</li> <li>3. two points on the line</li> <li>4. a set of data points</li> </ol>												<b>NCTM Standard</b> Pg. 297-300			
<b>Text Correlation</b> 1.2, Pgs. 118-122								<b>Rating</b> 1		<b>Additional Resources</b> <a href="http://mathaid.com/products/CollgAlgebra/full/contents_.html">http://mathaid.com/products/CollgAlgebra/full/contents_.html</a> <a href="http://www.accessone.com/%/7Ebbunge/Algebra/Algebra.html">http://www.accessone.com/%/7Ebbunge/Algebra/Algebra.html</a>					
<b>Assessment</b>  1. (District) Your salary was \$18,000 in 1983 and \$27,900 in 1992. If your salary follows a linear growth pattern, what will it be in 1995?  (a) \$29,300      (b) \$29,900      *(c) \$31,200      (d) \$37,200  2. (District) Find the slope of the line passing through (6, 10) and (-1, 4.)  (a) $\frac{7}{6}$ (b) $-\frac{7}{6}$ *(c) $\frac{6}{7}$ (d) $-\frac{6}{7}$															

<b>Math Analysis: Functions and Relations</b>																
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal	
									I	E	E	M				
<b>District Objective</b> *Write the equation of a line using the slope-intercept form and point-slope form of an equation. <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> IV B V A		<b>Quarter</b> I <b>No. Days</b> 3		
○ ITBS   ○ CRT   ○ EXPLORE   ○ EOI   ○ PLAN   ○ ACT   ○ AP																
<b>PASS Objective</b> The student will... <b>II. Functions and Relations (Algebra I)</b> E. Write the equation of and graph linear relationships: 1. <b>slope</b> and <b>y-intercept</b> 2. <b>slope</b> and one point on the line 3. two points on the line 4. <b>x-intercept</b> and <b>y-intercept</b> 5. a set of data points													<b>NCTM Standard</b> Pg. 297-300			
<b>Text Correlation</b> 1.2, Pgs. 118-124								<b>Rating</b> 1		<b>Additional Resources</b> <a href="http://math.uww.edu/~mcfarlat/141/line1.htm">http://math.uww.edu/~mcfarlat/141/line1.htm</a> <a href="http://math.rice.edu/~lanius/Algebra/hottub.html">http://math.rice.edu/~lanius/Algebra/hottub.html</a> <a href="http://mecca.org/~halfacre/MATH/function.htm">http://mecca.org/~halfacre/MATH/function.htm</a> <a href="http://www.ies.co.jp/math/java/index.html">http://www.ies.co.jp/math/java/index.html</a>						
<b>Assessment</b>  1. Rewrite the equation of the line $x + 7y = 35$ in slope - intercept form.  (a) $y = \frac{1}{7}x - 5$ * (b) $y = -\frac{1}{7}x + 5$ (c) $y = 7x + 5$ (d) $y = -7x + 5$  2. Find the equation of the line that has a slope of $-\frac{3}{4}$ and passes through (1, 2).  (a) $3x - 4y - 7 = 0$ (b) $3x - 4y - 11 = 0$ *(c) $3x + 4y - 11 = 0$ (d) $3x + 4y + 11 = 0$																

# Math Analysis: Functions and Relations

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal	
											I	M				
<b>District Objective</b> *Use interval, set, and function notation.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> II A, C		<b>Quarter</b> I <b>No. Days</b> 1		
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input checked="" type="radio"/> AP																
<b>PASS Objective</b> The student will... <b>II. Functions and Relations (Algebra I)</b> A. Define and distinguish between <b>relations</b> and <b>functions</b> , <b>dependent</b> and <b>independent</b> variables, and <b>domain</b> and <b>range</b> using <b>function</b> notation.													<b>NCTM Standard</b> Pg. 297-300			
<b>Text Correlation</b> 1.3, Pgs. 133-146								<b>Rating</b> 1		<b>Additional Resources</b>						
<b>Assessment</b>  (District) Given $f(x) = \begin{cases}  x-2 , & x \leq 1 \\  2x-5 , & x > 1 \end{cases}$ , find $f(1)$  *(a) 1 (b) -1 (c) 3 (d) -3																

# Math Analysis: Functions and Relations

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> *Graph a given function in an arbitrary window.  *Critical to success in next course.												<b>PASS Process Standard</b> IV C, D V A		<b>Quarter</b> I <b>No. Days</b> 1	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input checked="" type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 297-300			
<b>Text Correlation</b> 1.4, Pgs. 147-158						<b>Rating</b> 2		<b>Additional Resources</b>							

## Assessment

(District) Which viewing rectangle shows the most complete graph of the function  $f(x) = x^2 + x - 3$ ?

- |     |  |      |  |
|-----|--|------|--|
| (a) | $X \text{ min} = -6$<br>$X \text{ max} = 6$<br>$X \text{ scl} = 1$<br>$Y \text{ min} = -1$<br>$Y \text{ max} = 7$<br>$Y \text{ scl} = 1$ | *(c) | $X \text{ min} = -6$<br>$X \text{ max} = 6$<br>$X \text{ scl} = 1$<br>$Y \text{ min} = -4$<br>$Y \text{ max} = 4$<br>$Y \text{ scl} = 1$ |
| (b) | $X \text{ min} = 0$<br>$X \text{ max} = 6$<br>$X \text{ scl} = 1$<br>$Y \text{ min} = -4$<br>$Y \text{ max} = 4$<br>$Y \text{ scl} = 1$  | (d)  | $X \text{ min} = -9$<br>$X \text{ max} = 0$<br>$X \text{ scl} = 1$<br>$Y \text{ min} = -3$<br>$Y \text{ max} = 3$<br>$Y \text{ scl} = 1$ |

# Math Analysis: Functions and Relations

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
											I	M			
<b>District Objective</b> *Determine one-to-one correspondence of a function.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> II A IV A		<b>Quarter I</b> <b>No. Days</b> 2	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input checked="" type="radio"/> AP															
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 297-300		
<b>Text Correlation</b> 1.3, Pgs. 133-135						<b>Rating</b> 2		<b>Additional Resources</b> Functions: A Swinging Time Activity Familiar Functions							
<b>Assessment</b>  (District) Given $A = \{-2, -1, 0, 1\}$ and $B = \{1, 2, 3\}$ , determine which of the sets of ordered pairs represents a function from $A$ to $B$ .  *(a) $\{(-2, -1), (0, 1), (1, 1)\}$ (b) $\{(2, 1), (2, 2), (2, 3)\}$ (c) $\{(2, 1), (2, 2), (1, 3)\}$ (d) All of these															

<b>Math Analysis: Number Concepts and Properties</b>																
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal	
									I		E	M				
<b>District Objective</b> *Determine when an expression is undefined.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I A, B V A		<b>Quarter I</b> <b>No. Days</b> 1		
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP																
<b>PASS Objective</b> The student will... <b>I. Number Sense/Algebraic Operations (Algebra I)</b> C. Simplify and evaluate <b>expressions</b> including: 3. rational													<b>NCTM Standard</b> Pg. 297-300			
<b>Text Correlation</b> P-5, 54-63, 133-135								<b>Rating</b> 1		<b>Additional Resources</b>						
<b>Assessment</b>																
1. (ACT) For which real values of $x$ is $\frac{2x}{3^{2x-3}}$ defined?  (a) All real numbers      (b) All except 0      (c) All except $\frac{2}{3}$ (d) All except $\frac{3}{2}$ (e) All except $-\frac{3}{2}$																
2. (District) Find the domain of the function: $f(x) = \frac{5}{x^2 - 2x}$																

## Math Analysis: Functions and Relations

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
									I	E	E	M			
<b>District Objective</b> *Determine increasing and decreasing intervals of a function.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard II B</b>		<b>Quarter I</b> <b>No. Days</b> 1	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input checked="" type="radio"/> AP															
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 297-300		
<b>Text Correlation</b> 1.4, Pgs. 147-150					<b>Rating</b> 1			<b>Additional Resources</b>							
<b>Assessment</b>  Determine the interval(s) over which the function shown below is increasing: $y = 2x^3 + 3x^2 - 12x$ .  (a) $(-\infty, -2) \cup (0, \infty)$ (b) $(-\infty, 2) \cup (7, \infty)$ (c) $(2, 1)$ *(d) $(0, -7)$															

<b>Math Analysis: Functions and Relations</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
											I	M			
<b>District Objective</b> *Graph and analyze linear functions and inequalities.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> IV B, C		<b>Quarter</b> I <b>No. Days</b> 2	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will... <b>II. Functions and Relations (Algebra II)</b> B. Solve, analyze, and graph linear equations, inequalities, and systems.													<b>NCTM Standard</b> Pg. 297-300		
<b>Text Correlation</b> 1.2, Pgs. 118-132, 154-157				<b>Rating</b> 1		<b>Additional Resources</b> <a href="http://www.exploremath.com/lessonplans/index.cfm">http://www.exploremath.com/lessonplans/index.cfm</a> <a href="http://www2.academic.com/AcademicOnline/imath/UseGrapher.html">http://www2.academic.com/AcademicOnline/imath/UseGrapher.html</a>									
<b>Assessment</b>															
<p>1. (ACT) The line <math>y = \frac{2}{3}x + 2</math> passes through which one of the following points?</p> <p>(a) <math>F(-3, -2)</math>  (b) <math>G(0, 3)</math>  (c) <math>H(2, 3)</math>  (d) <math>J(3, 0)</math>  (e) <math>K(3, 4)</math></p> <p>2. (ACT) Which of the following inequalities is represented by the shaded region below?</p> <p>(a) <math>y \leq x + 1</math>  (b) <math>y \geq x + 1</math>  (c) <math>x + y \geq 1</math>  (d) <math>x + y \leq 1</math>  (e) <math>y + 1 \leq x</math></p>															

# Math Analysis: Functions and Relations

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal	
									I		E	M				
<b>District Objective</b> *Determine the domain and range of a function/relation.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I B II B	<b>Quarter I</b> <b>No. Days</b> 1			
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input checked="" type="radio"/> AP																
<b>PASS Objective</b> The student will... <b>II. Functions and Relations (Algebra I)</b> A. Define and distinguish between <b>relations</b> and <b>functions</b> , <b>dependent</b> and <b>independent</b> variables, and <b>domain</b> and <b>range</b> using <b>function</b> notation. <b>II. Functions and Relations (Algebra II)</b> H. Use functional notation and specify <b>domain</b> and <b>range</b> .													<b>NCTM Standard</b> Pg. 297-300			
<b>Text Correlation</b> 1.3, Pgs. 133-141								<b>Rating</b> 1	<b>Additional Resources</b> <a href="http://www.coolmath.com/func1.htm">http://www.coolmath.com/func1.htm</a>							
<b>Assessment</b>  1. (District) Find the domain of the function: $f(x) = \frac{1}{\sqrt{x^2 + 1}}$ . (a) $[-\infty, -1] \cup [1, \infty)$ (b) $[-\infty, 0] \cup [0, \infty)$ *(c) $[-\infty, \infty)$ (d) $[-\infty, -1] \cup [1, \infty)$  2. (District) Find the domain of the function $f(x) = \frac{1}{x^2 - 1}$ . (a) $[-2, 1]$ (b) $[-\infty, \infty)$ *(c) $[-2, -1, 0, 1]$ (d) $[-2, -3, -8]$ (e) $[-8, -3, -2, -1, 0, 1]$																

<b>Math Analysis: Functions and Relations</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
									I	E	E	M			
<b>District Objective</b> *Determine the symmetry of a function.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> IV B, C		<b>Quarter</b> I <b>No. Days</b> 1	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input checked="" type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 297-300			
<b>Text Correlation</b> 1.4, Pg. 153						<b>Rating</b> 1		<b>Additional Resources</b>							
<b>Assessment</b>  (District) Describe the transformation of the graph of $f(x) = x^6$ for the graph of $g(x) = -(x)^6$ .  (a) Reflection in the $x$ - axis *(b) Reflection in the $y$ - axis (c) Horizontal shift 1 unit to the right (d) Vertical shift 1 unit down															

# Math Analysis: Functions and Relations

K	1	2	3	4	5	6	7	Pre-Alg	Alg 1	Geom	Alg II	MA	P & S	Pre-Cal	AP Cal
											I	M			
<b>District Objective</b> *Identify characteristics of graphs based on a general equation such as $y = ax^2 + c$ or on a set of conditions.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I B III C		<b>Quarter I</b> <b>No. Days</b> 2	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will... <b>II. Functions and Relations (Algebra II)</b> A. Recognize the parent graph of the <b>function</b> $y = x^2$ and predict the effects of <b>transformations</b> on the parent graph (e. g., $y = x^2 + 3$ shifts the graph up 3, $y = 3x^2$ creates vertical stretching by a factor of 3).													<b>NCTM Standard</b> Pg. 297-300		
<b>Text Correlation</b> 1.1, Pgs. 103-117, 168-171								<b>Rating</b> 1		<b>Additional Resources</b>					
<b>Assessment</b>  1. (ACT) The equation $y = P(x)$ is graphed in the standard $(x, y)$ coordinate plane. If $P(x)$ is a 5th degree polynomial, which of the following CANNOT be the number of times the graph intersects (touches or crosses) the $x$ -axis?  *(a) 0                      (b) 1                      (c) 2                      (d) 3                      (e) 5  2. <del>ACT</del> <b>g</b> The two parabolas $y = ax^2 + n$ and $y = x^2 + q$ have the same vertex when graphed in the $(x, y)$ coordinate plane. Which of the following must be true?  (a) $n + q = 0$ (b) $nq = a$ (c) $nq = 1$ (d) $a = 1$ (e) $n = q$															

<b>Math Analysis: Functions and Relations</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
											I	M			
<b>District Objective</b> Identify special characteristics of parabolas from their equation (e.g., the vertex of a parabola).												<b>PASS Process Standard</b> I B II C		<b>Quarter I</b> <b>No. Days</b> 3	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 297-300			
<b>II. Functions and Relations (Algebra II)</b> E. Find or interpret the maximum and minimum value and the <b>y-intercept</b> of a <b>quadratic</b> function.															
<b>Text Correlation</b> 1.1, Pgs. 103-110, 168-171				<b>Rating</b> 1		<b>Additional Resources</b>									
<b>Assessment</b>															
<p>(ACT) A parabola with an equation of the form <math>y = ax^2 + bx + c</math> has the point (3, 1) as its vertex. If (1, 3) also lies on this parabola, which of the following is another point on the parabola?</p> <p>(a) (-3, -1)      (b) (-1, -3)      (c) (2, 2)      (d) (2, 6)      (e) (5, 3)</p>															

<b>Math Analysis: Functions and Relations</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
									I	E	E	M			
<b>District Objective</b> *Apply transformation skills to families of functions.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I A V B		<b>Quarter I</b> <b>No. Days</b> 2	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input checked="" type="radio"/> AP															
<b>PASS Objective</b> The student will... <b>II. Functions and Relations (Algebra I)</b> B. Recognize the parent graph of the functions $y = k$ , $y = x$ , $y =  x $ , and predict the effects of <b>transformations</b> on the parent graph (e.g., $y =  x  + 2$ , change <b>slope</b> , change <b>intercepts</b> , change <b>slope</b> and <b>intercept</b> ). <b>II. Functions and Relations (Algebra II)</b> A. Recognize the parent graph of the function $y = x^2$ and predict the effects of transformations on the parent graph (e.g., $y = x^2 + 3$ shifts the graph up 3, $y = 3x^2$ creates vertical stretching by a factor of 3). <b>III. Coordinate Geometry (Geometry)</b> A. Use transformations (reflection, rotation, translation) within coordinate geometry (e.g., reflect points across the $y$ -axis).													<b>NCTM Standard</b> Pg. 297-300		
<b>Text Correlation</b> 1.5, Pgs. 158-166								<b>Rating</b> 1		<b>Additional Resources</b>					
<b>Assessment</b>  (District) Which sequence of transformations will yield the graph of $g(x) = (x + 1)^2 + 10$ from the graph of $f(x) = x^2$ ?  (a) Horizontal shift 10 units to the right, Vertical shift 1 unit up *(b) Horizontal shift 1 unit to the left, Vertical shift 10 units up (c) Horizontal shift 1 unit to the right, Vertical shift 10 units up (d) Horizontal shift 10 units to the left, Vertical shift 1 unit up															

<b>Math Analysis: Functions and Relations</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
											I	M			
<b>District Objective</b> *Apply algebraic and arithmetic operations to the composition of functions.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> III B V A		<b>Quarter</b> I <b>No. Days</b> 2	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input checked="" type="radio"/> AP															
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 300-303		
<b>Text Correlation</b> 1.5, Pgs. 159-166				<b>Rating</b> 1		<b>Additional Resources</b>									
<b>Assessment</b>  Given $f(x) = x^2 - 2x$ and $g(x) = 3x + 2x$ , find $f \circ g(x)$ .  *(a) $4x^2 + 8x + 3$ (b) $2x^2 - 4x + 3$ (c) $2x^3 - x^2 - 6x$ (d) $3x^2 + x$															

## Math Analysis: Functions and Relations

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> *Determine even and odd functions.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I B V A		<b>Quarter</b> I <b>No. Days</b> 1	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input checked="" type="radio"/> AP															
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 297-300		
<b>Text Correlation</b> 1.4, Pgs. 152-155								<b>Rating</b> 1		<b>Additional Resources</b> <a href="http://library.thinkquest.org/2647/algebra/functype.htm">http://library.thinkquest.org/2647/algebra/functype.htm</a>					
<b>Assessment</b>  (District) Is the following function even or odd? $f(x) = 2x^3 + 3x^2$  (a) Even (b) Odd (c) Both *(d) Neither															

## Math Analysis: Functions and Relations

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> Solve problems involving direct, inverse, combined and joint variation.												<b>PASS Process Standard</b> I A, B		<b>Quarter I</b> <b>No. Days</b> 5	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 322-323		
<b>Text Correlation</b> 1.7, Pgs. 184-188						<b>Rating</b> 1		<b>Additional Resources</b> Decibel Levels Activity							
<b>Assessment</b>  (District) $V$ varies directly with the cube of $P$ and inversely with $Q$ . If $V = 2$ when $P = 2$ and $Q = 8$ , find $V$ when $P = 1$ and $Q = 2$ .  (a) 4                      (b) 2                      *(c) 1                      (d) $\frac{1}{2}$															

<b>Math Analysis: Data Analysis, Statistics and Probability</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
											I	M			
<b>District Objective</b> *Analyze and draw conclusions based on information from the tables and graphs including graphs in the coordinate plane. <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> V B, C		<b>Quarter</b> I <b>No. Days</b> 1	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will... <b>IV. Data Analysis, Statistics and Probability (Algebra I)</b> A. Translate from one representation of data to another and understand the data can be represented using a variety of tables, graphs, and symbols and that different modes of representation often convey different messages. C. Formulate and answer questions based on data shown on graphs, tables, charts; make valid inferences, predictions, and arguments.													<b>NCTM Standard</b> Pg. 329-331		
<b>Text Correlation</b> 1.7, Pgs. 184-188								<b>Rating</b> 1		<b>Additional Resources</b>					
<b>Assessment</b>  (ACT) Starting at her doorstep, Ramona walked down the sidewalk at 1.5 feet per second for 4 seconds. Then she stopped for 4 seconds, realizing that she had forgotten something. Next, she returned to her doorstep along the same route at 1.5 feet per second. The graph of Ramona's distance ( $d$ ) from her doorstep as a function of time ( $t$ ) would most resemble which of the following?  (a)                      (b)                      (c)                      *(d)                      (e)															

<b>Math Analysis: Functions and Relations</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> *Find the inverse of a function.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> V B		<b>Quarter</b> I <b>No. Days</b> 1	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 297-300			
<b>II. Functions and Relations (Algebra II)</b> I. Find the inverse of a <b>function</b> and graph.															
<b>Text Correlation</b> 1.6, Pgs. 173-183				<b>Rating</b> 1		<b>Additional Resources</b> <a href="http://www.sosmath.com/algebra/invfunc/fnc1.html">http://www.sosmath.com/algebra/invfunc/fnc1.html</a> <a href="http://www.purplemath.com/modules/invrscfn.htm">http://www.purplemath.com/modules/invrscfn.htm</a> <a href="http://integretchpub.com/examples/interactive/index.html">http://integretchpub.com/examples/interactive/index.html</a>									
<b>Assessment</b>															
(District) Algebraically, determine which sets of functions are not inverse of each other.															
(a) $f(x) = x^2 + 1$ $g(x) = \sqrt{x-1}$															
(b) $f(x) = x^2 - 1$ $g(x) = \sqrt{x+1}$															
*(c) $f(x) = 1 - x^2$ $g(x) = \sqrt{1+x^2}$															
(d) All of these are inverses of each other.															

## Math Analysis: Trigonometric Functions, Equations and Applications

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M		MM	
<b>District Objective</b> Determine the relationship between radian and degree measures.												<b>PASS Process Standard</b> IV B V C		<b>Quarter</b> I <b>No. Days</b> 3	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...														<b>NCTM Standard</b> Pg. 310-313	
<b>Text Correlation</b> 4.1, Pgs. 360-367						<b>Rating</b> 2		<b>Additional Resources</b> Calculator Exercises							
<b>Assessment</b>  1. (District) Convert to degrees: $\frac{5\pi}{12}$  (a) $82^\circ$ (b) $150^\circ$ (c) $36^\circ$ *(d) $75^\circ$  2. <del>District</del> Convert to degrees: 2.5 radians  *(a) $143.24^\circ$ (b) $0.04^\circ$ (c) $286.48^\circ$ (d) $450.00^\circ$															

## Math Analysis: Trigonometric Functions, Equations and Applications

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
										I		M			
<b>District Objective</b> Find the length of a circular arc.												<b>PASS Process Standard</b> I A, B II C		<b>Quarter</b> I <b>No. Days</b> 2	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 310-313			
<b>II. Properties of 2- and 3-Dimensional Figures (Geometry)</b> B. Use properties of 2- and 3-dimensional figures to determine unknown values (e.g., given the perimeter/circumference, find the area).															
<b>Text Correlation</b> 4.1, Pgs. 365-368						<b>Rating</b> 2		<b>Additional Resources</b> Math Analysis - Unit Circle Worksheet							
<b>Assessment</b>  (District) Find the arc length $s$ in the figure shown below.  (a) 3.49" (b) 37.22" *(c) 27.93" (d) 17.41"															

<b>Math Analysis: Functions and Relations</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
									I	E	M	MM			
<b>District Objective</b> Find the coordinates of the midpoint of a line segment.												<b>PASS Process Standard IV B</b>		<b>Quarter I</b> <b>No. Days 1</b>	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 310-313		
<b>III. Coordinate Geometry (Geometry)</b> B. Use coordinate geometry to find: 2. Midpoint of a segment															
<b>Text Correlation</b> Pg. 89, 371			<b>Rating</b> 2		<b>Additional Resources</b> <a href="http://1rg.com/algebra/practice/question2.htm">http://1rg.com/algebra/practice/question2.htm</a> <a href="http://www.tc.cc.va.us/VML/Mth03/Distance/Distance2/index.htm">http://www.tc.cc.va.us/VML/Mth03/Distance/Distance2/index.htm</a>										
<b>Assessment</b>															
1. Find the midpoint of the line segment joining $(-2, 1)$ and $(16, 3)$ . *(a) $(7,2)$ (b) $(9,1)$ (c) $(14,4)$ (d) $(-9,-1)$ (e) None of these  2. The point $(3, 2)$ is the midpoint of $(x, y)$ and $(5, 1)$ . Find the point $(x, y)$ . (a) $(3, 1)$ *(b) $(1, 3)$ (c) $(10, 2)$ (d) $(4, \frac{3}{2})$ (e) None of these															

<b>Math Analysis: Functions and Relations</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
										I	E	M			
<b>District Objective</b> Find the distance between two points, a line and a point, and two lines.												<b>PASS Process Standard</b> I B III A		<b>Quarter</b> I <b>No. Days</b> 1	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 303-305			
<b>III. Coordinate Geometry (Geometry)</b> B. Use coordinate geometry to find: 1. Distance between two points															
<b>Text Correlation</b> P-8, 87, 371				<b>Rating</b> 1		<b>Additional Resources</b>									
<b>Assessment</b>															
1. (District) Find the distance between the points (3, 17) and (-2, 5).  *(a) 13                    (b) $\sqrt{145}$ (c) $\sqrt{485}$ (d) $3\sqrt{51}$															
2. (ACT) Find the distance between the origin and the midpoint of the two points (3, 3) and (3, 5).  (a) $3\sqrt{2}$ (b) 7                    (c) $\sqrt{34}$ *(d) 5															

## Math Analysis: Trigonometric Functions, Equations and Applications

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> *Use the unit circle to evaluate the circular function.  *Critical to success in next course.												<b>PASS Process Standard</b> IV B, D		<b>Quarter</b> II <b>No. Days</b> 5	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 310-313			
<b>Text Correlation</b> 4.2, Pgs. 371-377				<b>Rating</b> 2		<b>Additional Resources</b> Wrapping Function Activity (2 sheets); “Calculator” Worksheet (2 pages); “Trig Toss Activity”; “Sin, Cos, Tan” Worksheet; “Find the Value” Worksheet; Circular Function Worksheet; Radian Lab Activity.									
<b>Assessment</b>  1. (District) Find the point $(x, y)$ on the unit circle that corresponds to the real number $t = -\frac{7\pi}{4}$ .  2. (ACT) If $\frac{\sin\theta}{\cos\theta} = \frac{\cos\theta}{\sin\theta}$ and $0 \leq \theta \leq \frac{\pi}{2}$ , what is the value of $\cos\theta$ ? (a) 1                      (b) $\frac{\sqrt{2}}{2}$ (c) $\frac{\pi}{4}$ (d) $45^\circ$ (e) No value of $\cos\theta$ is consistent with these conditions.  3. The figure below shows 2 points, $P$ and $Q$ , on a unit circle. What is the distance, in coordinate units, from $P$ to $Q$ ? (a) $\sqrt{(\cos\alpha - \cos\beta)^2 + (\sin\alpha - \sin\beta)^2}$ (b) $\sqrt{2 + 2\cos\alpha\cos\beta + 2\sin\alpha\sin\beta}$ (c) $2\sqrt{\cos\alpha\cos\beta + \sin\alpha\sin\beta}$ (d) $2\sqrt{\cos\alpha\cos\beta - \sin\alpha\sin\beta}$ (e) $2\cos\alpha\sin\beta$															

## Math Analysis: Trigonometric Functions, Equations and Applications

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
										I		M			
<b>District Objective</b> Identify a particular trigonometric ratio when all necessary side lengths of a right triangle are given.												<b>PASS Process Standard</b> I B III A, B		<b>Quarter II</b> <b>No. Days</b> 3	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will... <b>IV. Angles and Triangles (Geometry)</b> C. Express the trigonometric functions as <b>ratios</b> and derive the relationship between <b>sine</b> , <b>cosine</b> , and <b>tangent ratios</b> , and use to solve real-world problems.														<b>NCTM Standard</b> Pg. 310-313	
<b>Text Correlation</b> 4.3, Pgs. 380-387								<b>Rating</b> 2		<b>Additional Resources</b> Trig Identities Activity; Trigonometric Identities Worksheet					
<b>Assessment</b>  1. (ACT) In the figure below, $\angle B$ is a right angle and other measures are marked. What is $\tan x$ ?  (a) $\frac{15}{8}$ *(b) $\frac{8}{15}$ (c) $\frac{8}{17}$  (d) $\frac{15}{17}$ (e) $\frac{17}{15}$  2. (District) Using the right triangle, find $\cot \theta$ .															

# Math Analysis: Trigonometric Functions, Equations and Applications

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
										I		M			
<b>District Objective</b> Apply basic trigonometric ratios to solve right-triangle problems.												<b>PASS Process Standard</b> III A		<b>Quarter II</b> <b>No. Days</b> 4	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will... <b>IV. Angles and Triangles (Geometry)</b> C. Express the trigonometric functions as <b>ratios</b> and derive the relationship between <b>sine</b> , <b>cosine</b> , and <b>tangent ratios</b> , and use to solve real-world problems.												<b>NCTM Standard</b> Pg. 310-313			
<b>Text Correlation</b> 4.3, Pgs. 380-387						<b>Rating</b> 2		<b>Additional Resources</b> Trigonometric Ratios Activity <a href="http://phywww1.ncssm.edu/goebel/imp/index_f.html">http://phywww1.ncssm.edu/goebel/imp/index_f.html</a> <a href="http://www.univie.ac.at/future.media/moe/galerie.html">http://www.univie.ac.at/future.media/moe/galerie.html</a>							
<b>Assessment</b>  1. (ACT) From the time it takes a radar signal to bounce back from a plane, Air Traffic Control's radar can determine the distance, $d$ , of the plane from the radar dish. The angle, $a^\circ$ , that the plane makes with the horizontal, as shown below, can also be determined from the radar signal. From this information, a computer must determine the elevation of the plane above the level of the radar dish. Which of the following expressions gives the altitude?  *(a) $d \sin a^\circ$ (b) $d \cos a^\circ$ (c) $d \tan a^\circ$ (d) $d \cot a^\circ$ (e) $d \sec a^\circ$  2. (District) A sea - to - air guided missile shot from a submarine breaks the water surface at an angle of elevation of $20.4^\circ$ traveling at 520 feet per second. If the missile continues at a constant angle and at the same speed, how far above sea level will it be after 20 seconds ?															

## Math Analysis: Trigonometric Functions, Equations and Applications

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> *Identify graphs of basic trigonometric functions.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> V A, B		<b>Quarter II</b> <b>No. Days</b> 7	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 313-314			
<b>Text Correlation</b> 4.5, Pgs. 402-411								<b>Rating</b> 2		<b>Additional Resources</b> “Math Analysis Trig Function Graphs” Worksheet					
<b>Assessment</b>  (ACT) Match the graph shown below with the correct function.  (a) $y = 4 \sin 2x$ (b) $y = 2 \sin 4x$ (c) $y = 4 \cos 4x$ (d) $y = 2 \cos 2x$ *(e) None of the above															

## Math Analysis: Trigonometric Functions, Equations and Applications

K	1	2	3	4	5	6	7	Pre-Alg	Alg 1	Geom	Alg II	MA	P & S	Pre-Cal	AP Cal
												M			
<b>District Objective</b> *Use the amplitude, period, and phase shift to graph the trigonometric functions.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I A V A		<b>Quarter II</b> <b>No. Days</b> 3	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 314-315			
<b>Text Correlation</b> 4.5, Pgs. 402-411						<b>Rating</b> 2		<b>Additional Resources</b> "Math Analysis Graphics Calculator TI-82" Worksheet							
<b>Assessment</b> (District) Match the graph shown below with the correct function.															
(a) $y = -2 + \cos\left(\frac{\pi}{2}x - \frac{\pi}{2}\right)$															
(b) $y = -2 + \sin\left(\frac{\pi}{2}x + \frac{3\pi}{2}\right)$															
*(c) $y = -2 + \cos\left(\frac{\pi}{2}x + \frac{\pi}{2}\right)$															
(d) $y = -2 + \sin\left(\frac{\pi}{2}x - \frac{3\pi}{2}\right)$															

## Math Analysis: Trigonometric Functions, Equations and Applications

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> *Evaluate and graph inverse trigonometric functions.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I A, B V A		<b>Quarter II</b> <b>No. Days</b> 3	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 297-300		
<b>Text Correlation</b> 4.1, Pgs. 427-435			<b>Rating</b> 2		<b>Additional Resources</b> <a href="http://members.tripod.com/mathhelpcentral/inverse_trigonometric_functions.htm">http://members.tripod.com/mathhelpcentral/inverse_trigonometric_functions.htm</a>										
<b>Assessment</b>  1. (District) Match the graph shown below with the correct function.  (a) $y = \arctan(x - 1)$ (b) $y = \arctan 2x$ (c) $y = \arccos \frac{x}{2}$ *(d) $y = \arcsin \frac{x}{2}$  2. (District) Evaluate: $\arccos \frac{F_1 I}{G_2 K}$  (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3}$ (c) $-\frac{\pi}{3}$ *(d) $\frac{2\pi}{3}$															

## Math Analysis: Trigonometric Functions, Equations and Applications

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												I/M			
<b>District Objective</b> *Use trigonometric concepts and basic identities to solve problems.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> III B, C, D		<b>Quarter II</b> <b>No. Days</b> 4	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will... <b>IV. Angles and Triangles (Geometry)</b> C. Express the trigonometric functions as <b>ratios</b> and derive the relationship between <b>sine</b> , <b>cosine</b> , and <b>tangent ratios</b> , and use to solve real-world problems.													<b>NCTM Standard</b> Pg. 310-313		
<b>Text Correlation</b> 5.3, Pgs. 474-481								<b>Rating</b> 1		<b>Additional Resources</b> <a href="http://math.usask.ca/readin/trid.html">http://math.usask.ca/readin/trid.html</a> <a href="http://phywww1.ncssm.edu/goebel/imp/index_f.html">http://phywww1.ncssm.edu/goebel/imp/index_f.html</a>					
<b>Assessment</b>  1. (ACT) Which of the following is equivalent to $\frac{1 - \cos^2 \theta}{\cos^2 \theta}$ ?  (a) $\sec^2 \theta$ (b) $(\csc^2 \theta) - 1$ *(c) $\tan^2 \theta$ (d) $\sin^2 \theta$ (e) $-\frac{1}{\sin^2 \theta}$															
2. (District) Verify the identity and confirm it graphically: $\sin x + \frac{\cos^2 x}{\sin x} = \csc x$															

## Math Analysis: Trigonometric Functions, Equations and Applications

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												I/M			
<b>District Objective</b> *Solve trigonometric equations.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I B III A		<b>Quarter II</b> <b>No. Days</b> 4	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 310-313			
<b>Text Correlation</b> 5.3, Pgs. 474-481						<b>Rating</b> 1		<b>Additional Resources</b> <a href="http://www.sosmath.com/algebra/solve/solve0/solvtrig.html">http://www.sosmath.com/algebra/solve/solve0/solvtrig.html</a>							
<b>Assessment</b>  (District) Find all solutions in the interval $[0, 2\pi)$ $8 \sin \theta - 8 = 0$															
(a) $\frac{\pi}{2}, \frac{3\pi}{2}$ (b) $\frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}$ (c) $\pi$ (d) 0      (e) None of these															

## Math Analysis: Sum and Difference Formulas

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												I/M			
<b>District Objective</b> Use Trigonometric sum and difference identities to evaluate expressions.												<b>PASS Process Standard</b>		<b>Quarter II</b> <b>No. Days</b> 4	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 310-313		
<b>Text Correlation</b> 5.4, Pgs. 485-491								<b>Rating</b>		<b>Additional Resources</b> <a href="http://www.sosmath.com/trig/prodform/prodform.html">http://www.sosmath.com/trig/prodform/prodform.html</a>					
<b>Assessment</b>															

## Math Analysis: Trigonometric Functions, Equations and Applications

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> *Use the law of sines to solve a triangle.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I A, B V A		<b>Quarter II</b> <b>No. Days</b> 2	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 310-313		
<b>Text Correlation</b> 6.1, Pgs. 511-519			<b>Rating</b> 2		<b>Additional Resources</b> <a href="http://www.univie.ac.at/future.media/moe/galerie/galerie.html">http://www.univie.ac.at/future.media/moe/galerie/galerie.html</a> <a href="http://www.mste.uiuc.edu/teacher/resource/heron.html">http://www.mste.uiuc.edu/teacher/resource/heron.html</a> <a href="http://aleph0.clarku.edu/~djoyce/java/trig/oblique.html">http://aleph0.clarku.edu/~djoyce/java/trig/oblique.html</a>										
<b>Assessment</b>  (District) Given triangle with $A = 41^\circ$ , $B = 72^\circ$ , and $a = 15$ , find $c$ .  (a) 19.6 (b) 10.7 *(c) 21.0 (d) 7.8															

## Math Analysis: Trigonometric Functions, Equations and Applications

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> *Use the law of cosines to solve a triangle.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I A, B III A		<b>Quarter II</b> <b>No. Days</b> 3	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 310-313			
<b>Text Correlation</b> 6.2, Pgs. 522-530			<b>Rating</b> 2		<b>Additional Resources</b> Oblique Triangles Activity; <a href="http://mathaid.com/products/Trigonometry/full/contents_.html">http://mathaid.com/products/Trigonometry/full/contents_.html</a> <a href="http://www.ies.co.jp/math/java/Trig/index.html">http://www.ies.co.jp/math/java/Trig/index.html</a>										
<b>Assessment</b>  (District) Given triangle with $a = 80$ , $b = 51$ , and $c = 113$ , find $C$ .  *(a) $117.5^\circ$ (b) $27.5^\circ$ (c) $157.4^\circ$ (d) $62.5^\circ$															

## Math Analysis: Trigonometric Functions, Equations and Applications

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> Find the area of a triangle (Use Heron's Formula).												<b>PASS Process Standard</b> I A, B II C		<b>Quarter II</b> <b>No. Days</b> 1	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 310-313		
<b>Text Correlation</b> 6.2, Pgs. 525-527							<b>Rating</b> 2		<b>Additional Resources</b> I Spy Activity; <a href="http://www.acts.tinet.ie/areaoftriangle_673.html">http://www.acts.tinet.ie/areaoftriangle_673.html</a> <a href="http://jwilson.coe.ugs.edu/emt725/Herson/Heron.html">http://jwilson.coe.ugs.edu/emt725/Herson/Heron.html</a>						
<b>Assessment</b>  (District) Use Heron's Formula to find the area of the triangle with $a = 23$ , $b = 17$ , and $c = 28$ .  *(a) 195.3 (b) 15.1 (c) 104.7 (d) 195.3															

## Math Analysis: Vectors

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												I/M			
<b>District Objective</b> Represent vectors using ordered pairs or ordered triples.												<b>PASS Process Standard</b> I A, B		<b>Quarter III</b> <b>No. Days</b> 1	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 290-293			
<b>Text Correlation</b> 6.3, Pgs. 531-541							<b>Rating</b> 2		<b>Additional Resources</b>						
<b>Assessment</b>  (District) A vector $v$ has initial point $(3, 7)$ and terminal point $(3, -2)$ . Find its component form.  (a) $\langle 0, 9 \rangle$ (b) $\langle 9, 0 \rangle$ *(c) $\langle 0, -9 \rangle$ (d) $\langle -9, 0 \rangle$															

## Math Analysis: Vectors

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												I/M			
<b>District Objective</b> Add and subtract vectors geometrically.												<b>PASS Process Standard</b> I B IV A		<b>Quarter III</b> <b>No. Days</b> 1	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 290-293			
<b>Text Correlation</b> 6.3, Pgs. 531-541						<b>Rating</b> 2		<b>Additional Resources</b> Vector Relays Activity; I Have, Who Has??? Activity							
<b>Assessment</b>															
(District) Given $u = 4i - 3j$ , $w = i - j$ , and $v = 2u + 3w$ , find $v$ .															
(a) $\langle 7, -4 \rangle$ (b) $\langle 7, -9 \rangle$ *(c) $\langle 11, -9 \rangle$ (d) $\langle 11, -4 \rangle$															

## Math Analysis: Vectors

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> *Add, subtract, multiply, and find the magnitude of vectors algebraically..  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I B IV A, D	<b>Quarter III</b> <b>No. Days</b> 2		
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 290-293		
<b>Text Correlation</b> 6.3, Pgs. 531-541							<b>Rating</b> 2		<b>Additional Resources</b> Vector Land Activity; The Vector Cross Product Activity; <a href="http://www.ies.co.jp/math/java/trig/index.html">http://www.ies.co.jp/math/java/trig/index.html</a> <a href="http://intergate.cccoe.k12.ca.us/javamath/precalc/vector.htm">http://intergate.cccoe.k12.ca.us/javamath/precalc/vector.htm</a>						
<b>Assessment</b>  (District) A vector $v$ has initial point $(1, 8)$ and terminal point $(3, -7)$ . Find its magnitude.  *(a) $\sqrt{299}$ (b) $\sqrt{5}$ (c) $4\sqrt{14}$ (d) $\sqrt{15}$															

## Math Analysis: Vectors

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> Find the inner/dot and cross products of vectors.												<b>PASS Process Standard</b> V A, B		<b>Quarter III</b> <b>No. Days</b> 1	
○ ITBS   ○ CRT   ○ EXPLORE   ○ EOI   ○ PLAN   ○ ACT   ○ AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 290-293			
<b>Text Correlation</b> 6.4, Pgs 545-553							<b>Rating</b> 2		<b>Additional Resources</b>						
<b>Assessment</b>  (District) Given $u = 3i + 2j$ and $v = i - j$ , find $u \cdot v$ .  (a) $3i^2 - ij - 2j^2$ (b) $3i^2 - 2j^2$ (c) 5 *(d) 1															

## Math Analysis: Vectors

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												I/M			
<b>District Objective</b> Determine whether two vectors are perpendicular.												<b>PASS Process Standard</b> I B III B, C		<b>Quarter III</b> <b>No. Days</b> 1	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 290-293			
<b>Text Correlation</b> 6.4, Pgs. 545-553							<b>Rating</b> 1		<b>Additional Resources</b>						
<b>Assessment</b>															
<p>(District) Which of the following pairs of vectors are perpendicular?</p> <p>(a) <math>v = 3i - 2j</math>, <math>w = -i + 2j</math></p> <p>* (b) <math>v = -2i</math>, <math>w = 5j</math></p> <p>(c) <math>v = -i + 2j</math>, <math>w = -\frac{1}{2}j</math></p> <p>(d) <math>v = 2i - 3j</math>, <math>w = -2i + 3j</math></p>															

## Math Analysis: Vectors

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> *Solve problems using vectors and right triangle trigonometry.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I A, B IV A, B	<b>Quarter III</b> <b>No. Days</b> 1		
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 290-293		
<b>Text Correlation</b> 6.4, Pgs. 549-553				<b>Rating</b> 2		<b>Additional Resources</b> <a href="http://glenbrook.k12.il.us/gbssci/phys/Class/vectors/u311f.html">http://glenbrook.k12.il.us/gbssci/phys/Class/vectors/u311f.html</a>									
<b>Assessment</b>  (District) Two forces, one of 120 pounds and the other of 200 pounds, act on the same objects at angles of $30^\circ$ and $-30^\circ$ respectively, with the positive $x$ -axis. Find the direction of the resultant of these two forces.  (a) $14^\circ$ *(b) $-8.2^\circ$ (c) $0^\circ$ (d) $-18^\circ$															

# Math Analysis: Equations and Inequalities

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
											I	M			
<b>District Objective</b> *Solve quadratic equations.  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I A, B V A		<b>Quarter III</b> <b>No. Days</b> 4	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will... <b>II. Functions and Relations (Algebra II)</b> C. Solve <b>quadratic equations</b> by: <ol style="list-style-type: none"> <li>1. graphing</li> <li>2. factoring</li> <li>3. completing the square</li> <li>4. <b>quadratic formula</b></li> </ol>													<b>NCTM Standard</b> Pg. 296-303		
<b>Text Correlation</b> 2.1, Pgs. 206-215					<b>Rating</b> 1		<b>Additional Resources</b> Rational Rummy Activity; <a href="http://mathscribe.com">http://mathscribe.com</a> <a href="http://mathaid.com/products/Precalc/full/contents_.html">http://mathaid.com/products/Precalc/full/contents_.html</a>								
<b>Assessment</b>  1. (ACT) The equation $10w^2 + 17w - 20 = 0$ has what types of numbers as its two solutions? <ol style="list-style-type: none"> <li>(a) Two negative real numbers</li> <li>* (b) One positive real number and one negative real number</li> <li>(c) Two positive real numbers</li> <li>(d) One negative real number and zero</li> <li>(e) One positive real number and zero</li> </ol> 2. (District) Solve: $(x - 1)^2 = 3x + 5$ <ol style="list-style-type: none"> <li>(a) 1, 4</li> <li>(b) <math>\frac{5 \pm \sqrt{39}}{2}</math></li> <li>(c) <math>\frac{5 \pm \sqrt{41}}{2}</math></li> <li>(d) -1, 6</li> <li>(e) None of these</li> </ol>															

<b>Math Analysis: Graphical Representations</b>																
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal	
											I	M				
<b>District Objective</b> Graph solutions to quadratic inequalities on the number line.												<b>PASS Process Standard</b> V A, B		<b>Quarter</b> I <b>No. Days</b> 1		
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP																
<b>PASS Objective</b> The student will...													<b>NCTM Standard</b> Pg. 296-303			
<b>Text Correlation</b> P-6, 70-73			<b>Rating</b> 2		<b>Additional Resources</b> Sign of a Quadratic Function with Application to Inequalities Activity; <a href="http://www.exploremath.com/activities/Activity_page.cfm?ActivityID=35">http://www.exploremath.com/activities/Activity_page.cfm?ActivityID=35</a>											

## Assessment

1. (ACT) Which of the following is a graph of the solution of the inequality  $-x^2 + 5x - 6 < 0$ ?

(a) (b)

(c) (d)

(e)

2. (ACT) For what values of  $x$  is  $4x^2 + 5x - 6$  positive?

(a)  $x < -\frac{1}{4}$  or  $x > 6$  (b)  $x < -\frac{3}{4}$  or  $x > 2$  (c)  $x < -\frac{3}{2}$  or  $x > 1$

(d)  $x < -2$  or  $x > \frac{3}{4}$  (e)  $x < -6$  or  $x > \frac{1}{4}$

## Math Analysis: Functions and Relations

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
									I		E	M			
<b>District Objective</b> *Find the zeros of a function and turning points (critical values).  <i>*Critical to success in next course.</i>												<b>PASS Process Standard</b> I B V A		<b>Quarter III</b> <b>No. Days</b> 2	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input checked="" type="radio"/> AP															

<p><b>PASS Objective</b> The student will...</p> <p><b>II. Functions and Relations (Algebra I)</b> I. Solve linear equations by graphing or using properties of equality.</p> <p><b>II. Functions and Relations (Algebra II)</b> B. Solve, analyze, and graph linear equations, inequalities, and systems. E. Find or interpret the maximum and minimum value and the <b>y-intercept</b> of a <b>quadratic</b> function.</p>	<p><b>NCTM Standard</b> Pgs. 297-303</p>
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<p><b>Text Correlation</b> 2.1, Pgs. 206, 215</p>	<p><b>Rating</b> 1</p>	<p><b>Additional Resources</b> <a href="http://www.exploremath.com/activities/index.cfm">http://www.exploremath.com/activities/index.cfm</a></p>
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<p><b>Assessment</b></p> <p>(District) Find the quadratic function whose graph opens upward and has <math>x</math> - intercepts at (0, 0) and (-6, 0).</p> <p>(a) <math>y = x^2 - 6x + 9</math>  (b) <math>y = x^2 + 12x + 36</math>  *(c) <math>y = x^2 + 6x</math>  (d) <math>y = x^3 + 12x^2 + 36x</math></p>
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**Math Analysis: Algebraic Expressions, Equations and Inequalities**

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			

<p><b>District Objective</b> *Divide polynomials by binomials (including synthetic division).</p> <p><i>*Critical to success in next course.</i></p>	<p><b>PASS Process Standard</b> I A, B</p>	<p><b>Quarter III</b> <b>No. Days</b> 3</p>
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<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...														<b>NCTM Standard</b> Pg. 297-303	
<b>Text Correlation</b> 2.3, Pgs. 234-243			<b>Rating</b> 1		<b>Additional Resources</b> <a href="http://www.mhhe.com/math/precabc/barnettpc/student/olc/ch03_worked.htm">http://www.mhhe.com/math/precabc/barnettpc/student/olc/ch03_worked.htm</a>										
<b>Assessment</b>  1. Use synthetic division to find $f(-2)$ : $f(x) = 4x^3 + 3x + 10$  (a) 20            (b) -20            (c) 36            *(d) -28  2. Divide by long division: $(2x^3 - x^2 - 3x + 4) \div (2x + 1)$  *(a) $x^2 - x - 1 + \frac{5}{2x+1}$ (b) $x^2 - \frac{3}{2} + \frac{5}{2(2x+1)}$  (c) $x^2 - x - 1 + \frac{3}{2x+1}$ (d) $x^2 - x - 2 + \frac{6}{2x+1}$															
<b>Math Analysis: Algebraic Expressions, Equations and Inequalities</b>															
K	1	2	3	4	5	6	7	Pre-Alg	Alg 1	Geom	Alg II	MA	P & S	Pre-Cal	AP Cal
												M			
<b>District Objective</b> Use the Remainder and Factor Theorems to find the factors of polynomial equations.												<b>PASS Process Standard</b> I B IV D		<b>Quarter III</b> <b>No. Days</b> 2	
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															

<b>PASS Objective</b> The student will...		<b>NCTM Standard</b> Pg. 297-303
<b>Text Correlation</b> 2.3, Pgs. 235-237	<b>Rating</b> 1	<b>Additional Resources</b>
<b>Assessment</b>  (District) Use the root - finding capabilities of a graphing utility to approximate the indicated zero. Use synthetic division to verify your result and then factor the polynomial completely: $f(x) = 6x^3 + 17x^2 - 4x - 3$  <i>SOLUTION:</i> $x = \frac{1}{2}$ : $f(x) = (2x - 1)(x + 3)(3x + 1)$		

<b>Math Analysis: Functions and Relations</b>																
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal	
									I	E	E	M				
<b>District Objective</b> *Determine the intercepts of a function.  *Critical to success in next course.												<b>PASS Process Standard</b> I A, B		<b>Quarter III</b> <b>No. Days</b> 1		
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input checked="" type="radio"/> AP																



<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...														<b>NCTM Standard</b> Pg. 297-303	
<b>Text Correlation</b> 2.4, Pgs. 243-249				<b>Rating</b> 2		<b>Additional Resources</b>									
<b>Assessment</b>  (District) List the possible rational zeros of the function: $f(x) = 3x^5 + 2x^2 - 3x + 2$ .  (a) $\pm 3, \pm 2, \pm \frac{3}{2}, \pm 1, \pm \frac{2}{3}$ (b) $\pm 3, \pm \frac{1}{3}, \pm 2, \pm \frac{1}{2}, \pm 1$  *(c) $\pm 2, \pm 1, \pm \frac{2}{3}, \pm \frac{1}{3}$ (d) $\pm 3, \pm 1, \pm \frac{3}{2}, \pm \frac{1}{2}$															
<b>Math Analysis: Polar Coordinates and Complex Numbers</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			
<b>District Objective</b> Add, subtract, multiply and divide complex numbers in rectangular form.												<b>PASS Process Standard</b> I A IV B V A		<b>Quarter III</b> <b>No. Days</b> 4	

<p>○ ITBS   ○ CRT   ○ EXPLORE   ○ EOI   ○ PLAN   ○ ACT   ○ AP</p>															
<p><b>PASS Objective</b> The student will...</p> <p><b>I. Number Sense/Algebraic Operations (Algebra II)</b> A. Define and perform <b>operations</b> on: 2. <b>complex</b> numbers</p>														<p><b>NCTM Standard</b> Pg. 290-294</p>	
<p><b>Text Correlation</b> 2.5, Pgs. 252-259</p>				<p><b>Rating</b> 1</p>		<p><b>Additional Resources</b> <a href="http://whyslopes.com/freeAccess/applet.html">http://whyslopes.com/freeAccess/applet.html</a></p>									
<p><b>Assessment</b></p> <p>1. (District) Write in standard form: <math>(16 + 2i) - (3 + 4i^2)</math>. (a) <math>9 + 2i</math>      (b) <math>13 - 2i</math>      (c) <math>15 + 21</math>      *(d) <math>17 + 2i</math></p> <p>2. (District) Multiply: <math>(3 + 7i)(6 - 2i)</math>. (a) <math>18 + 22i</math>      (b) <math>4 + 48i</math>      (c) <math>4 + 36i</math>      *(d) <math>32 + 36i</math></p> <p>3. (District) Divide. Write your answer in standard form: <math>\frac{-4 + i}{1 + 4i}</math>. (a) <math>-\frac{8}{17} + i</math>      (b) <math>-i</math>      *(c) <math>i</math>      (d) <math>\frac{8}{17} - i</math></p>															
<p><b>Math Analysis: Algebraic Expressions, Equations and Inequalities</b></p>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			

<b>District Objective</b> *Use the Fundamental Theorem of Algebra to determine the roots of a polynomial equation.  <i>*Critical to success in next course.</i>										<b>PASS Process Standard</b> V A, B			<b>Quarter III</b> <b>No. Days</b> 2		
○ ITBS   ○ CRT   ○ EXPLORE   ○ EOI   ○ PLAN   ○ ACT   ○ AP															
<b>PASS Objective</b> The student will...												<b>NCTM Standard</b> Pg. 296-303			
<b>Text Correlation</b> 2.6, Pgs. 260-267				<b>Rating</b> 1		<b>Additional Resources</b> Calculating a Car Payment Activity; <a href="http://www.mathmax.com/interalg/chapter/bk4imipp/chapter5/bk4c5s5.html">http://www.mathmax.com/interalg/chapter/bk4imipp/chapter5/bk4c5s5.html</a>									
<b>Assessment</b>  Find all of the zeros of the function: $f(x) = x^4 - 5x^3 + 8x^2 - 20x + 16$  (a) 1, 4, $\pm 2$ (b) -4, -1, $\pm 2i$ *(c) 1, 4, $\pm 2i$ (d) -4, -1, $-2i, 2i$															
<b>Math Analysis: Algebraic Expressions, Equations and Inequalities</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			

<b>District Objective</b> *Solve rational equations.  <i>*Critical to success in next course.</i>		<b>PASS Process Standard</b> I A, B V A	<b>Quarter III</b> <b>No. Days</b> 2
○ ITBS   ○ CRT   ○ EXPLORE   ○ EOI   ○ PLAN   ○ ACT   ○ AP			
<b>PASS Objective</b> The student will...			<b>NCTM Standard</b> Pg. 296-303
<b>Text Correlation</b> 2.7, Pgs. 269-279	<b>Rating</b> 2	<b>Additional Resources</b>	
<b>Assessment</b>  (District) Find the real zeros of $f: f(x) = \frac{x+2}{x-1}$  (a) $x = 0$ (b) $x = 0, 2$ (c) $x = -2$ *(d) $x = 0, 2$			

<b>Math Analysis: Exponential and Logarithmic Functions</b>															
K	1	2	3	4	5	6	7	Pre-Alg	Alg 1	Geom	Alg II	MA	P & S	Pre-Cal	AP Cal
												M			

<b>District Objective</b> Evaluate and simplify expressions containing rational exponents.										<b>PASS Process Standard</b> I B III A IV B			<b>Quarter III</b> <b>No. Days</b> 1		
○ ITBS   ○ CRT   ○ EXPLORE   ○ EOI   ○ PLAN   ○ ACT   ○ AP															
<b>PASS Objective</b> The student will...										<b>NCTM Standard</b> Pg. 297-303					
<b>Text Correlation</b> 3.1, Pgs. 298-307		<b>Rating</b> 1		<b>Additional Resources</b> Converting from Radical Form to Rational Exponents (and Vice Versa): A Matching Game Activity; <a href="http://ucsub.colorado.edu/~maybin/mtop/ms06/exp.html">http://ucsub.colorado.edu/~maybin/mtop/ms06/exp.html</a> <a href="http://www.mathnotes.com/intermediate/aw_interchap7.html">http://www.mathnotes.com/intermediate/aw_interchap7.html</a> <a href="http://www.mathmax.com/interalg/chapter/bk4imipp/chapter6/bk4c6s2.html">www.mathmax.com/interalg/chapter/bk4imipp/chapter6/bk4c6s2.html</a> <a href="http://147.4.150.5/~matscw/tut_alg_review/unitA_3.html">http://147.4.150.5/~matscw/tut_alg_review/unitA_3.html</a>											
<b>Assessment</b>  (District) Evaluate: $(2^3 \cdot 3^2)^{-1}$ .  (a) $-72$ (b) $\frac{1}{46,656}$ (c) $-\frac{1}{36}$ *(d) $\frac{1}{72}$															
<b>Math Analysis: Exponential and Logarithmic Functions</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			

<b>District Objective</b> Evaluate expressions with irrational exponents.										<b>PASS Process Standard</b> I A III B IV B			<b>Quarter III</b> <b>No. Days</b> 1		
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...										<b>NCTM Standard</b> Pg. 297-303					
<b>Text Correlation</b> 3.1, Pgs. 298-307			<b>Rating</b> 2		<b>Additional Resources</b>										
<b>Assessment</b>  (District) Evaluate: $5.1(1.32)^{\sqrt{2}}$ . Round your answer to 2 decimal places.  (a) 14.83 (b) 27.69 (c) 9.52 *(d) 7.55															
<b>Math Analysis: Exponential and Logarithmic Functions</b>															
K	1	2	3	4	5	6	7	Pre-Alg	Alg 1	Geom	Alg II	MA	P & S	Pre-Cal	AP Cal
											I	M			

<b>District Objective</b> *Graph exponential equations.  <i>*Critical to success in next course.</i>										<b>PASS Process Standard</b> I B IV A, B			<b>Quarter III</b> <b>No. Days</b> 2		
○ ITBS   ○ CRT   ○ EXPLORE   ○ EOI   ○ PLAN   ○ ACT   ○ AP															
<b>PASS Objective</b> The student will... <b>II. Functions and Relations (Algebra II)</b> K. Use technology to interpret and graph <b>exponential</b> and <b>logarithmic functions</b> (e.g., compound growth, population, decibels).										<b>NCTM Standard</b> Pg. 296-303					
<b>Text Correlation</b> 3.1, Pgs. 298-307				<b>Rating</b> 1		<b>Additional Resources</b> <a href="http://www.exploremath.com/lessonplans/index.cfm">http://www.exploremath.com/lessonplans/index.cfm</a> <a href="http://mathnotes.com/aw_intermediate.html">http://mathnotes.com/aw_intermediate.html</a>									
<b>Assessment</b>  (District) Match the graph shown below with the correct function.  (a) $y = 3^{x-1}$ *(b) $y = 3^x - 1$ (c) $y = 3^{1-x}$ (d) $y = 3^{-x} - 1$															
<b>Math Analysis: Exponential and Logarithmic Functions</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			

<b>District Objective</b> *Use the exponential function $y = e^x$ (growth, decay, compound interest).  <i>*Critical to success in next course.</i>										<b>PASS Process Standard</b> IV A, C V A				<b>Quarter III</b> <b>No. Days</b> 2	
○ ITBS   ○ CRT   ○ EXPLORE   ○ EOI   ○ PLAN   ○ ACT   ○ AP															
<b>PASS Objective</b> The student will... <b>II. Functions and Relations (Algebra II)</b> J. Use technology to apply the inverse relationship between <b>exponential and logarithmic functions</b> to solve problems.										<b>NCTM Standard</b> Pg. 296-303					
<b>Text Correlation</b> 3.1, Pgs. 298-307				<b>Rating</b> 1		<b>Additional Resources</b> Lab # 43 - Exponential Growth-Rumor Spreading									
<b>Assessment</b>  (District) \$1500 is invested at a rate of 8% compounded quarterly. What is the balance at the end of 5 years?  (a) \$1624.67                      (b) \$2237.74                      *(c) \$2228.92                      (d) \$2226.04															
<b>Math Analysis: Exponential and Logarithmic Functions</b>															
K	1	2	3	4	5	6	7	Pre-Alg	Alg 1	Geom	Alg II	MA	P & S	Pre-Cal	AP Cal
											I	M			

<b>District Objective</b> *Find logarithms and antilogarithms of numbers. <i>*Critical to success in next course.</i>										<b>PASS Process Standard</b> II C			<b>Quarter III</b> <b>No. Days</b> 6		
○ ITBS   ○ CRT   ○ EXPLORE   ○ EOI   ○ PLAN   ● ACT   ○ AP															
<b>PASS Objective</b> The student will... <b>II. Functions and Relations (Algebra II)</b> J. Use technology to apply the inverse relationship between <b>exponential</b> and <b>logarithmic functions</b> to solve problems. K. Use technology to interpret and graph <b>exponential</b> and <b>logarithmic functions</b> (e.g., compound growth, population, decibels).										<b>NCTM Standard</b> Pg. 297-303					
<b>Text Correlation</b> 3.3-3.4, Pgs. 310-327			<b>Rating</b> 1		<b>Additional Resources</b> Sonic Booms and Logarithms Activity; Exponent Shuffle Problems; <a href="http://www.exploremath.com/lessonplans/index.cfm">http://www.exploremath.com/lessonplans/index.cfm</a> <a href="http://mathnotes.com/aw_intermediate.html">http://mathnotes.com/aw_intermediate.html</a> <a href="http://pumas.ipl.nasa.gov/inv/examples/06_01_97_1.pdf">http://pumas.ipl.nasa.gov/inv/examples/06_01_97_1.pdf</a>										
<b>Assessment</b>  1. (ACT) If $\log_x 81 = 4$ , then $x = ?$ (a) 3                      (b) 9                      (c) $\frac{81}{4}$ (d) $\frac{81}{\log^4}$ (e) $81^4$  2. (District) Write as the logarithm of a single quantity: $\frac{1}{5} [3 \log(x+1) + 2 \log(x-1) - \log 7]$ .															
<b>Math Analysis: Functions and Relations</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
									I		E	M			

<b>District Objective</b> Determine the points of intersection between two or more functions (Solve systems of equations).										<b>PASS Process Standard</b> I A III A IV D			<b>Quarter IV</b> <b>No. Days</b> 5		
○ ITBS   ○ CRT   ○ EXPLORE   ○ EOI   ○ PLAN   ○ ACT   ○ AP															
<b>PASS Objective</b> The student will... <b>II. Functions and Relations (Algebra I)</b> L. Solve a system of linear equations by: 1. graphing 2. substitution 3. elimination										<b>NCTM Standard</b> Pg. 297-303					
<b>Text Correlation</b> 7.1, Pgs. 574-581			<b>Rating</b> 1		<b>Additional Resources</b> <a href="http://147.4.150.5/~matscw/RealWorld/index.htm">http://147.4.150.5/~matscw/RealWorld/index.htm</a>										
<b>Assessment</b>  1. Solve the system: $5x + y = 11$ $3x - 2y = 4$  (a) $\frac{5}{13}, \frac{68}{13}$ (b) (2, 21)   *(c) (2, 1)   (d) $\frac{5}{8}, -15$  2. A total of \$11,000 is invested in two funds paying 7% and 8% simple interest. If the yearly interest for both funds totals \$865, determine the amount invested at 8%.  *(a) \$9500   (b) \$6500   (c) \$1500   (d) \$4500															
<b>Math Analysis: Algebraic Expressions, Equations and Inequalities</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal

										I	M					
<b>District Objective</b> *Write expressions that require planning and/or manipulating to accurately model a situation (Linear Programming).  <i>*Critical to success in next course.</i>											<b>PASS Process Standard</b> I A, B II A IV A, B, C, D		<b>Quarter IV</b> <b>No. Days</b> 4			
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP																
<b>PASS Objective</b> The student will... <b>I. Number Sense/Algebraic Operations (Algebra I)</b> A. Translate word phrases and sentences into <b>expressions</b> and equations and vice versa.													<b>NCTM Standard</b> Pg. 334-341			
<b>Text Correlation</b> 7.5, Pgs. 620-629					<b>Rating</b> 2		<b>Additional Resources</b> Linear Programming Activity									
<b>Assessment</b>  1. (ACT) If during 1 hour of a certain television program there are $x + y$ commercials, where $x$ of them are 30-second commercials and the rest are 1-minute commercials, which of the following expressions represents the number of minutes left for noncommercial programming during the hour?  (a) $60 - 2x - y$ (b) $60 - 30x - y$ (c) $60 - 30x - 60y$ *(d) $60 - \frac{1}{2}x - y$ (e) $60 - \frac{1}{30}x - \frac{1}{60}y$  2. (District) Find a linear equation giving the total cost, $c$ , of producing $x$ units given that 200 graphing calculators cost \$1050 to produce and 525 calculators cost \$2350 to produce.																
<b>Math Analysis: Matrices and Linear Programming</b>																
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal	
												M				

<b>District Objective</b> Add, subtract, and multiply matrices.	<b>PASS Process Standard</b> I A IV B V B	<b>Quarter IV</b> <b>No. Days</b> 6
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP		
<b>PASS Objective</b> The student will... <b>I. Number Sense/Algebraic Operations (Algebra II)</b> C. Operate with matrices to solve problems: 1. Add, subtract, and multiply matrices		<b>NCTM Standard</b> Pg. 290-295

<b>Text Correlation</b> 8.2, Pgs. 655-665	<b>Rating</b> 1	<b>Additional Resources</b>
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**Assessment**

Given  $A = \begin{bmatrix} 3 & 6 & -1 \\ 7 & 5 & 2 \\ 1 & 5 & 2 \end{bmatrix}$  and  $B = \begin{bmatrix} 1 & 0 & 5 \\ 1 & 2 & 7 \\ 1 & 2 & 7 \end{bmatrix}$  find  $3A - 2B$ .

\*(a)  $\begin{bmatrix} 7 & 18 & -13 \\ 1 & 11 & -8 \\ 1 & 11 & -8 \end{bmatrix}$       (b)  $\begin{bmatrix} 7 & 18 & 2 \\ 1 & 11 & -8 \\ 1 & 11 & -8 \end{bmatrix}$

(c)  $\begin{bmatrix} 1 & 18 & 7 \\ 7 & 19 & 20 \\ 1 & -2 & 9 \end{bmatrix}$       (d)  $\begin{bmatrix} 7 & 18 & -13 \\ 1 & 9 & 20 \\ 1 & -2 & 9 \end{bmatrix}$

<b>Math Analysis: Matrices and Linear Programming</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			

<b>District Objective</b> Evaluate determinants (including Cramer's Rule and area of triangles).										<b>PASS Process Standard</b> I A IV B V B				<b>Quarter IV</b> <b>No. Days</b> 7	
○ ITBS ○ CRT ○ EXPLORE ○ EOI ○ PLAN ○ ACT ○ AP															
<b>PASS Objective</b> The student will... <b>I. Number Sense/Algebraic Operations (Algebra II)</b> C. Operate with matrices to solve problems: 2. Find the inverse and determinant of a matrix												<b>NCTM Standard</b> Pg. 290-295			
<b>Text Correlation</b> 8.4, Pgs. 679-685				<b>Rating</b> 2		<b>Additional Resources</b> <a href="http://www.sosmath.com/matrix/determ0/determ0.html">http://www.sosmath.com/matrix/determ0/determ0.html</a>									
<b>Assessment</b>															
1. (District) Evaluate: $\begin{vmatrix} 7 & -1 \\ 4 & 2 \\ 16 & -2 \end{vmatrix}$															
(a) -20      *(b) -8      (c) 8      (d) 20															
2. (District) Use a determinant to find the area of the triangle with vertices (2, -1), (3, 2), and (6, 0)															
*(a) 4      (b) 8      (c) 6      (d) 12															
<b>Math Analysis: Sequences and Series</b>															
K	1	2	3	4	5	6	7	Pre-Alg	Alg 1	Geom	Alg II	MA	P & S	Pre-Cal	AP Cal
												M			

<b>District Objective</b> Find the sum of “ <i>n</i> ” terms of an arithmetic series.										<b>PASS Process Standard</b> I A II A II C			<b>Quarter IV</b> <b>No. Days</b> 2		
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will...										<b>NCTM Standard</b> Pg. 297-303					
<b>Text Correlation</b> 9.1, Pgs. 708-717		<b>Rating</b> 1		<b>Additional Resources</b> Arithmetic Series Activity; <a href="http://www.ugrad.math.ubc.ca/coursedoc/math102/java/m102/demos/series/geom.html">http://www.ugrad.math.ubc.ca/coursedoc/math102/java/m102/demos/series/geom.html</a>											
<b>Assessment</b>															
(District) Find the sum: $\sum_{n=1}^{500} (3n + 5)$															
(a) 756,500 (b) 376,250 *(c) 752,500 (d) 378,250															
<b>Math Analysis: Sequences and Series</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			

<b>District Objective</b> *Use summation notation.  <i>*Critical to success in next course.</i>	<b>PASS Process Standard</b> II A IV B	<b>Quarter</b> IV <b>No. Days</b> 2
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○ ITBS   ○ CRT   ○ EXPLORE   ○ EOI   ○ PLAN   ○ ACT   ○ AP

<b>PASS Objective</b> The student will...	<b>NCTM Standard</b> Pg. 296-297
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<b>Text Correlation</b> 9.1, Pgs. 708-718	<b>Rating</b> 1	<b>Additional Resources</b> <a href="http://ww2.mcgill.ca/course/204204B01/applets/usage.html">http://ww2.mcgill.ca/course/204204B01/applets/usage.html</a>
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**Assessment**

Find the sum:  $\sum_{n=3}^6 \frac{3}{n-2}$

(a)  $\frac{12}{9}$       \*(b)  $\frac{25}{4}$       (c)  $\frac{3}{16}$       (d)  $\frac{1}{2}$

**Math Analysis: Sequences and Series**

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			

<b>District Objective</b> *Find the “ $n$ th” term and arithmetic means of an arithmetic sequence.  <i>*Critical to success in next course.</i>		<b>PASS Process Standard</b> I B II A, C	<b>Quarter</b> IV <b>No. Days</b> 2
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP			
<b>PASS Objective</b> The student will...			<b>NCTM Standard</b> Pg. 297-303
<b>Text Correlation</b> 9.2, Pgs. 720-728	<b>Rating</b> 1	<b>Additional Resources</b>	
<b>Assessment</b>  Find $a$ for the arithmetic sequence with $a_1 = 5$ , $d = -4$ , and $n = 98$ .  (a) $-392$ (b) $-387$ *(c) $-383$ (d) $393$			

<b>Math Analysis: Sequences and Series</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			

<b>District Objective</b> *Find the limit of the terms of an infinite sequence.  <i>*Critical to success in next course.</i>	<b>PASS Process Standard</b> I A IV A V C	<b>Quarter IV</b> <b>No. Days</b> 2
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ITBS  
  CRT  
  EXPLORE  
  EOI  
  PLAN  
  ACT  
  AP

<b>PASS Objective</b> The student will...	<b>NCTM Standard</b> Pg. 297-303
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<b>Text Correlation</b> 9.2, Pgs. 720-727	<b>Rating</b> 2	<b>Additional Resources</b> Mathematical Black Holes Worksheet Sucked in Again: Black Holes Revisited Worksheet
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**Assessment**

(District) Evaluate:  $\sum_{n=0}^{\infty} 4 \left(\frac{2}{3}\right)^n = 4 + \frac{8}{3} + \frac{16}{9} + \frac{32}{27} + \dots$

(a) 8  
 (b) 10  
 \*(c) 12  
 (d) 14

**Math Analysis: Sequences and Series**

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
											I	M			

<b>District Objective</b> *Find the “nth” term of a geometric sequence.  <i>*Critical to success in next course.</i>										<b>PASS Process Standard</b> I B II A V B			<b>Quarter IV</b> <b>No. Days</b> 4		
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input checked="" type="radio"/> ACT <input type="radio"/> AP															
<b>PASS Objective</b> The student will... <b>III. Data Analysis, Statistics, and Probability (Algebra II)</b> F. Identify arithmetic and geometric series and <b>sequences</b> (e.g., <b>binomial expansion</b> , Pascal’s Triangle).													<b>NCTM Standard</b> Pg. 297-303		
<b>Text Correlation</b> 9.3, Pgs. 720-735				<b>Rating</b> 2		<b>Additional Resources</b>									
<b>Assessment</b>  1. (District) Write the first five terms of the geometric sequence where $a_1 = 2, a_3 = 12$ .  2. (ACT) In the geometric sequence $8, 2, \frac{1}{2}, N, \dots$ what is the 4th term, $N$ ?  (a) $\frac{1}{4}$ (b) $\frac{1}{8}$ (c) $\frac{1}{16}$ (d) $\frac{1}{32}$ (e) $\frac{1}{64}$															
<b>Math Analysis: Sequences and Series</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												I			

<b>District Objective</b> *Apply geometric series in problems.  <i>*Critical to success in next course.</i>	<b>PASS Process Standard</b> II A IV A, C	<b>Quarter</b> IV <b>No. Days</b> 2
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○ ITBS   ○ CRT   ○ EXPLORE   ○ EOI   ○ PLAN   ○ ACT   ● AP

<b>PASS Objective</b> The student will...	<b>NCTM Standard</b> Pg. 297-303
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<b>Text Correlation</b> 9.3, Pgs. 720-735	<b>Rating</b> 1	<b>Additional Resources</b> Geometric Series: A Sports Application Activity
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**Assessment**

(District) An individual buys a \$100,000 term life insurance policy. During the next five years the value of the policy will depreciate at the rate of 4% per year. (That is, at the end of each year, the depreciated value is 96% of the value at the beginning of the year.) Find the depreciated value of the policy at the end of five years.

(a) \$80,000                      (b) \$84,934.66                      \*(c) \$81,537.27                      (d) \$78,275.78

### Math Analysis: Sequences and Series

K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
											I	M			

<b>District Objective</b> Use the binomial theorem to expand binomials.										<b>PASS Process Standard</b> III A, C V B			<b>Quarter IV</b> <b>No. Days</b> 2		
○ ITBS   ○ CRT   ○ EXPLORE   ○ EOI   ○ PLAN   ○ ACT   ○ AP															
<b>PASS Objective</b> The student will... <b>III. Data Analysis, Statistics, and Probability (Algebra II)</b> F. Identify arithmetic and geometric series and <b>sequences</b> (e.g., <b>binomial expansion</b> , Pascal's Triangle).										<b>NCTM Standard</b> Pg. 324-333					
<b>Text Correlation</b> 9.5, Pgs. 750-757				<b>Rating</b> 2		<b>Additional Resources</b> The Twelve Days of Christmas and Pascal's Triangle Activity									
<b>Assessment</b>  (District) Use the Binomial Theorem to expand, then simplify: $(2x - 3)^3$  (a) $8x^3 - 324x^2 + 324x - 27$ *(b) $8x^3 - 36x^2 + 54x - 27$ (c) $2x^3 - 18x^2 + 54x - 27$ (d) $8x^3 - 12x^2 + 27x - 27$															
<b>Math Analysis: Polar Coordinates and Complex Numbers</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal
												M			

<b>District Objective</b> *Convert polar coordinates to rectangular coordinates and rectangular coordinates to polar coordinates.  <i>*Critical to success in next course.</i>	<b>PASS Process Standard</b> I A IV B V A	<b>Quarter IV</b> <b>No. Days</b> 2
<input type="checkbox"/> ITBS <input type="checkbox"/> CRT <input type="checkbox"/> EXPLORE <input type="checkbox"/> EOI <input type="checkbox"/> PLAN <input type="checkbox"/> ACT <input type="checkbox"/> AP		
<b>PASS Objective</b> The student will...		<b>NCTM Standard</b> Pg. 308-318

<b>Text Correlation</b> 10.7, Pgs. 846-852	<b>Rating</b> 2	<b>Additional Resources</b> <a href="http://mathaid.com/products/Trigonometry/full/contents_.html">http://mathaid.com/products/Trigonometry/full/contents_.html</a>
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<b>Assessment</b>	
1. (District) Convert from polar to rectangular coordinates: $1, -\frac{5\pi}{3}$	
(a) $\frac{1}{2}, -\frac{\sqrt{3}}{2}$	(b) $\frac{\sqrt{3}}{2}, -\frac{1}{2}$
*(c) $\frac{1}{2}, -\frac{\sqrt{3}}{2}$	(d) $\frac{\sqrt{3}}{2}, \frac{1}{2}$
2. (District) Convert from rectangular to polar coordinates: (-4, 4)	
(a) $4\sqrt{2}, \frac{\pi}{4}$	*(b) $4\sqrt{2}, \frac{3\pi}{4}$
(c) $4\sqrt{2}, -\frac{\pi}{4}$	(d) $4\sqrt{2}, -\frac{7\pi}{4}$

<b>Math Analysis: Polar Coordinates and Complex Numbers</b>															
K	1	2	3	4	5	6	7	Pre- Alg	Alg 1	Geom	Alg II	MA	P & S	Pre- Cal	AP Cal

											M			
<b>District Objective</b> *Graph polar coordinates and simple polar equations.  <i>*Critical to success in next course.</i>										<b>PASS Process Standard</b> I A IV B V A		<b>Quarter IV</b> <b>No. Days</b> 3		
<input type="radio"/> ITBS <input type="radio"/> CRT <input type="radio"/> EXPLORE <input type="radio"/> EOI <input type="radio"/> PLAN <input type="radio"/> ACT <input type="radio"/> AP														
<b>PASS Objective</b> The student will...										<b>NCTM Standard</b> Pg. 308-318				
<b>Text Correlation</b> 10.8, Pgs. 854-861			<b>Rating</b> 2		<b>Additional Resources</b>									
<b>Assessment</b>														
(District) Plot the point whose polar coordinates are $\left( \frac{G}{H}, \frac{\pi}{6} \right)$														
(a)					(b)									
*(c)					(d)									
(e) None of these														

**Suggested Strategies / Activities**

