













Square Roots $\sqrt{x^6} = x^3 $ $\sqrt{x^8} = x^4$ $\sqrt{x^7} = x^3\sqrt{x}$	Absolute Value Inequalities $ x < c \quad -c < x < c$ $ x > c \quad x < -c \text{ or } c < x$	Distance Formula $A(x_1, y_2) \text{ and } B(x_2, y_2)$ $d(A, B) = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$		Midpoint Formula $A(x_1, y_2) \text{ and } B(x_2, y_2)$ $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$	
Equation of a Circle $(x-h)^2 + (y-k)^2 = r^2$	Point-Slope Form $y - y_1 = m(x - x_1)$	Standard Form $Ax + By + C = 0$	All Students Take Calculus I-All pos. II-sin III-tan IV-cos		Law of Cosines $a^2 = b^2 + c^2 - 2bc \cdot \cos A$
Joint Variation If z is varies jointly as x and y , $z = kxy$	Perpendicular Lines $m_2 = -\frac{1}{m_1}$	Average Rate of Change $\text{ARoC} = \frac{y \text{ change}}{x \text{ change}} = \frac{f(x_2) - f(x_1)}{x_2 - x_1}$		Difference of Cubes $a^3 + b^3 = (a+b)(a^2 - ab + b^2)$ $a^3 - b^3 = (a-b)(a^2 + ab + b^2)$	Standard Form of a Quadratic Function $f(x) = a(x - h)^2 + k$
Vertical Shifts of Graphs Suppose $c > 0$. Graph $y = f(x) + c$ by shifting $y = f(x)$ up c . Graph $y = f(x) - c$ by shifting $y = f(x)$ down c .			Horizontal Shifts of Graphs Suppose $c > 0$. Graph $y = f(x - c)$ by shifting $y = f(x)$ right c . Graph $y = f(x + c)$ by shifting $y = f(x)$ left c .		Definition of Log if $a^x = y$, $\log_a y = x$
Reflecting Graphs Graph $y = -f(x)$ by reflecting $y = f(x)$ in the x -axis. Graph $y = f(-x)$ by reflecting $y = f(x)$ in the y -axis.			Vertical Stretching of Graphs To graph $y = cf(x)$, graph $y = f(x)$, then if $c > 1$ stretch vertically a by factor of c if $0 < c < 1$ shrink vertically a by factor of c		Arc Length $s = r\theta$
Horizontal Stretching of Graphs To graph $y = f(cx)$, graph $y = f(x)$, then if $c > 1$ shrink horizontally by a factor of $\frac{1}{c}$ if $0 < c < 1$ stretch horizontally by a factor of $\frac{1}{c}$			Even and Odd Functions if $f(-x) = f(x)$ $f(x)$ is even if $f(-x) = -f(x)$ $f(x)$ is odd		Inverse Variation If y is inversly proportional to x . $y = \frac{k}{x}$
Min or Max of a Quadratic Function $f(x) = x(x - h)^2 + k \quad f(h) = k$ $f(x) = ax^2 + bx + c \quad f(-\frac{b}{2a})$		Change of Base $\log_b m = \frac{\log m}{\log b}$	Completing the Square With a quadratic in form $ax^2 + bx = c$ $(\frac{1}{2} \cdot b)^2 = c$	Hidden quadratic 1 $x^{-3/2} + 2x^{-1/2} + x^{1/2}$ $x^{-3/2}(1 + 2x + x^2)$ $x^{-3/2}(1 + x)^2$	Hidden quadratic 2 $e^{2x} + 2e^x + 1$ $(e^x + 1)^2$
Permutations $p(x, y) = \frac{x!}{(x - y)!}$	Choose Formula $C(x, y) = \binom{x}{y} = \frac{x!}{y!(x - y)!}$	Law of Sines $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$		Degrees to Radians $\frac{A \cdot \pi}{180} = \theta$	Remainder Theorem If $P(x) \div (x - c)$, the remainder = $P(c)$.
SOH-CAH-TOA $\sin = \frac{\text{opp}}{\text{hyp}} \quad \cos = \frac{\text{adj}}{\text{hyp}} \quad \tan = \frac{\text{opp}}{\text{adj}}$		Sector Area $A = \frac{1}{2}r^2\theta$	Direct Variation If y is directly proportional to x , $y = kx$	Population Growth n is population size, r is relative growth rate, t is time $n = n_0e^{rt}$	
Property of logs $(\log_a b)(\log_c d) = (\log_a d)(\log_c b)$					

<div>Algebra of Functions</div> <div>Let f and g be functions with domains A and B.</div> <div>$(f + g)(x) = f(x) + g(x)$ Domain $A \cap B$</div> <div>$(f - g)(x) = f(x) - g(x)$ Domain $A \cap B$</div> <div>$(fg)(x) = f(x)g(x)$ Domain $A \cap B$</div> <div>$\left(\frac{f}{g}\right)(x) = \frac{f(x)}{g(x)}$ Domain $\{x \in A \cap B \mid g(x) \neq 0\}$</div> <div>$(f \circ g)(x) = f(g(x))$ Domain $\{x \in B \mid g(x) \in A\}$</div>		<div>Polynomial Synthetic Division</div> <div>$(x^3 + x^2 - 1) \div (x + 2)$</div> <div><table><tr><td>- 2</td><td>1</td><td>1</td><td>0</td><td>- 1</td></tr><tr><td></td><td></td><td>- 2</td><td>2</td><td>- 4</td></tr><tr><td></td><td>1</td><td>- 1</td><td>2</td><td>- 5</td></tr></table></div>	- 2	1	1	0	- 1			- 2	2	- 4		1	- 1	2	- 5	<div>Polynomial Long Division</div> <div>$x^2 - x + 2$</div> <div><table><tr><td>$x + 2$</td><td>$x^3 + x^2$</td><td>- 1</td></tr><tr><td></td><td>$- x^3 - 2x^2$</td><td></td></tr><tr><td></td><td>$- x^2$</td><td></td></tr><tr><td></td><td>$x^2 + 2x$</td><td></td></tr><tr><td></td><td>$2x - 1$</td><td></td></tr></table></div>	$x + 2$	$x^3 + x^2$	- 1		$- x^3 - 2x^2$			$- x^2$			$x^2 + 2x$			$2x - 1$	
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<div>Rational Roots Theorem</div> <div>$2x^3 + 2x^2 - 3x - 6$</div> <div>$\pm 1, \pm 2 \qquad \pm 1, \pm 2, \pm 3, \pm 6$</div> <div>Possible rational roots:</div> <div>$\pm 1, \pm \frac{1}{2}, \pm 2, \pm 3, \pm \frac{3}{2}, \pm 6$</div>	<div>Decartes' Rule of Signs</div> <div>Count num. of sign changes</div> <div>$P(x) = 3x^6 + 4x^5 + 3x^3 - x - 3$</div> <div>1 positive real root</div> <div>$P(-x) = 3x^6 - 4x^5 - 3x^3 + x - 3$</div> <div>1 or 3 negative real roots</div>	<div>Logarithm Formulas</div> <div>$\log(m \cdot n) = \log m + \log n$</div> <div>$\log\left(\frac{m}{n}\right) = \log m - \log n$</div> <div>$\log(m^n) = n \cdot \log m$</div> <div>$\log_b b^x = x = b^{\log_b x}$</div>																															
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<div>Trig Identities</div> <div>$\sin^2 + \cos^2 = 1$</div> <div>$\tan^2 + 1 = \sec^2$</div> <div>$1 + \cot^2 = \csc^2$</div>																																	