SCIENTIFIC CALC	ULATOR ONLY NO grap	ning calculator allowed	on the final!!!				
1) Find the vertical a	asymptote(s) of: $f(x) = \frac{1}{x^2}$	$\frac{1}{-3x-10}$					
[A] <i>y</i> = 2, -5, -3	[B] <i>x</i> = 2, -5, -3, 1	[C] <i>x</i> = 1	[D] $x = 5, -2$	[E] None of these			
2) Find the horizont	al asymptote(s) of: $f(x) = \frac{1}{2}$	$\frac{x^2-1}{x^2-9}$					
[A] $y = 1$	[B] $y = 0$	[C] $x = 1$	[D] $x = 1, -1$	[E] None of these			
3) Find the domain of: $f(x) = \frac{x^3 - 1}{x^2 - 4}$							
[A] All real	[B] $\Re, x \neq 2$	[C] $\Re, x \neq 1$	[D] $\Re, x \neq 1, 2$	[E] None of these			
4) Find all x- and y-intercepts of: $f(x) = \frac{x-14}{x^2-4}$							
[A] $\begin{array}{c} x = 14 \\ y = -2 \end{array}$	[B] $\begin{array}{l} x = -12, \frac{1}{2} \\ \text{no y-intercept} \end{array}$	[C] $\begin{array}{c} x = 14 \\ y = \frac{1}{2} \end{array}$	[D] $\begin{array}{c} x = 14 \\ y = -\frac{7}{2} \end{array}$	[E] None of these			
5) Find the slant asymptote of: $f(x) = \frac{x^3 + 7x^2 - 1}{x^2 + 1}$							
[A] $y = 1$	[B] $y = x + 7$	[C] $y = x - 8$	[D] $y = x + 1$	[E] No Slant Asym.			
6) Determine which function represents the graph.							
$[A] f(x) = \frac{2x^2 - 3}{x - 3}$	$\frac{5x+5}{-2}$ [B] $f(x) = \frac{x+3}{-2}$	$\frac{-2}{x}$	2	y = 2x - 1			
[C] $f(x) = \frac{2x^3 - x}{x^2 - x}$	$\frac{x^2 - 2x + 1}{x + 3x + 2} [D] f(x) = \frac{x}{x + 3x + 2}$	$\frac{e^2}{-2}$ [E] None of the	ise				
For #7 – 11 , perform 7) $\frac{2x}{x+4} + \frac{x^2+4}{x^2-16}$	m the indicated operation.		/ ‡				
[A] $\frac{1}{x+4}$	[B] $\frac{(x+2)(x-2)}{(x+4)(x-4)}$	[C] $\frac{x^2 - 8x - 4}{(x+4)(x-4)}$	[D] $\frac{3x^2 - 8x + 4}{(x+4)(x-4)}$	[E] None of these			
8) $\frac{x^2 + 10x + 24}{x^2 - 16}$	$\div \frac{x+6}{x-6}$ [A] $\frac{10x+6}{4}$	[B] $\frac{x-6}{x-4}$ [C] $\frac{x}{x-4}$	$\frac{x+4}{-6}$ [D] $\frac{x-10}{x-4}$	[E] None of these			

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9) $\frac{\frac{1}{x+2}}{\frac{4}{2}-3}$ [A] $\frac{3x+4}{12x-12}$ [B] $\frac{x}{-3x^2-2x-8}$ [C] $\frac{x}{-7x-14}$ [D] $\frac{x+12}{-4x-8}$ [E] None of these 10) $\frac{4}{r+2} + \frac{1}{r-2}$ [A] $\frac{5r-6}{r^2-4}$ [B] $\frac{5r-6}{4}$ [C] $\frac{5}{r^2-4}$ [D] $\frac{5}{r+2}$ [E] None of these 11) $\frac{\frac{1}{x-3}}{-\frac{1}{x-2}}$ [A] $\frac{x+2}{-x+3}$ [B] $\frac{x}{-3x+9}$ [C] $\frac{-x}{2x^2-5x-3}$ [D] $-\frac{2x+1}{2x+2}$ [E] None of these **12)** Solve: $-\frac{8}{3x+1} - \frac{6x}{3x-1} = -2$ [A] $x = \frac{1}{5}$ [B] $x = \frac{1}{3}$ [C] $x = -\frac{4}{3}$ **[D]** $x = \frac{5}{2}$ [E] None of these **13)** Solve and write the answer in interval notation. $\frac{5x-5}{x-5} \ge 2$ $[A] \left(-\infty, -\frac{5}{3} \right) \qquad [B] \left(-\infty, -\frac{5}{3} \right], (5, \infty) \quad [C] \left[5, \infty \right) \qquad [D] \left| -\frac{10}{3}, 5 \right], (5, \infty) \quad [E] \text{ None of these}$ **14)** Determine which of the following is $y = \left(\frac{1}{2}\right)^x$ shifted 3 units up and 4 units to the right. **[A]** $y = \left(\frac{1}{2}\right)^{x+3} + 4$ **[B]** $y = \left(\frac{1}{2}\right)^{x-4} + 3$ **[C]** $y = \left(\frac{1}{2}\right)^{x-4} - 3$ **[D]** $y = \left(\frac{1}{2}\right)^{x-3} + 4$ **[E]** None of these **15)** Determine which of the following is $y = \log_2 x$ shifted 2 units down and 5 units to the left. **[A]** $y = \log_2(x-2) - 5$ **[B]** $y = \log_2(x+5) + 2$ **[C]** $y = \log_2(x+2) - 5$ **[D]** $y = \log_2(x+5) - 2$ [E] None of these **16)** Identify the asymptote of: $y = \log_2(x-4) + 3$ **[B]** x = 4 **[C]** y = 4**[A]** x = 3**[D]** y = 3[E] None of these

17) Identify the asymptote of: $y = \left(\frac{1}{2}\right)^{x-4} + 6$ [A] x = 4 [B] x = 6 [C] y = 4 [D] y = 6

18) Write in exponential form: $y = \log_2 x$ **[A]** $x = 2^y$ **[B]** $y = 2^x$ **[C]** $x = y^2$ **[D]** $2 = x^y$

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hing calculator allowed	on the final!!!	
[A] $\log_{25} x = 3$	[B] $\log_x 25 = 3$	[C] $\log_3 25 = x$
[D] $\log_3 x = 25$	[E] None of these	
$g_a 2 \approx 0.2789$ and $\log_a 3$	B≈0.4421.	
[C] 0.0349	[D] 1.4420	[E] None of these
[A] $x = \frac{3}{4}$	[B] $x = -\frac{1}{3}$	[C] $x = \frac{4}{3}$
[D] $x = \frac{2}{3}$	[E] None of these	
[A] $x = \frac{6}{11}$	[B] $x = \frac{7}{3}$	[C] $x = \frac{7}{3}, -5$
[D] $x = \frac{6}{11}, 5$	[E] None of these	
id $c = 123$, find <i>a</i> .		
[C] 82.6	[D] 112.1	[E] None of these
nd $c = 60.3$, find <i>B</i> .		
[C] 73.7 [°] ,106.3 [°]	[D] 32.3 [°] ,0.3 [°]	[E] No Δ possible
= 22, find C.		
[C] 87.2 ⁰	[D] 99.7 ⁰	[E] None of these
al side of an angle of 225	^o lies.	
[C] Q III	[D] Q IV	[E] Lies on an axis
[B] $\frac{2p}{3}$	[C] $\frac{\rho}{6}$ [D] $\frac{\rho}{2}$	[E] None of these
[A] $-\frac{\sqrt{33}}{4}$	[B] $-\frac{4\sqrt{33}}{33}$	[C] $\frac{\sqrt{33}}{4}$
[D] $\frac{4\sqrt{33}}{33}$	[E] None of these	
	hing calculator allowed [A] $\log_{25} x = 3$ [D] $\log_3 x = 25$ $g_a 2 \approx 0.2789 \text{ and } \log_a 3$ [C] 0.0349 [A] $x = \frac{3}{4}$ [D] $x = \frac{2}{3}$ [A] $x = \frac{6}{11}$ [D] $x = \frac{6}{11}, 5$ and $c = 123$, find a . [C] 82.6 and $c = 60.3$, find B . [C] 73.7°, 106.3° = 22, find C. [C] 87.2° al side of an angle of 225 [C] Q III C [B] $\frac{2p}{3}$ [A] $-\frac{\sqrt{33}}{4}$ [D] $\frac{4\sqrt{33}}{33}$	hing calculator allowed on the final!!! [A] $\log_{25} x = 3$ [B] $\log_x 25 = 3$ [D] $\log_3 x = 25$ [E] None of these $g_a 2 \approx 0.2789$ and $\log_a 3 \approx 0.4421$. [C] 0.0349 [D] 1.4420 [A] $x = \frac{3}{4}$ [B] $x = -\frac{1}{3}$ [D] $x = \frac{2}{3}$ [E] None of these [A] $x = \frac{6}{11}$ [B] $x = \frac{7}{3}$ [D] $x = \frac{6}{11}$, 5 [E] None of these id $c = 123$, find a . [C] 82.6 [D] 112.1 ad $c = 60.3$, find B . [C] 73.7°,106.3° [D] 32.3°,0.3° = 22, find C. [C] 87.2° [D] 99.7° al side of an angle of 225° lies. [C] Q III [D] Q IV $\frac{2}{2}$ [B] $\frac{2p}{3}$ [C] $\frac{p}{6}$ [D] $\frac{p}{2}$ [A] $-\frac{\sqrt{33}}{4}$ [B] $-\frac{4\sqrt{33}}{33}$ [D] $\frac{4\sqrt{33}}{33}$ [E] None of these

+Algebra 2/Trig		Review Packet for Final Exam	– 2 nd Semester 4
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29) Given $\tan \theta = \frac{4}{3}$ and $\sin \theta > 0$. find $\cos \theta$	7. [A] $\frac{3}{5}$	[B] $-\frac{4}{5}$	[C] $\frac{4}{5}$
	[D] $-\frac{3}{5}$	[E] None of these	
30) Find the exact value of $\sec \frac{7\pi}{4}$.	[A] $-\frac{\sqrt{3}}{2}$	[B] −√3	[C] $-\frac{\sqrt{2}}{2}$
	[D] $-\frac{\sqrt{3}}{3}$	[E] None of these	
31) Evaluate: $\operatorname{arcsin}\left(-\frac{1}{2}\right)$	[A] $\frac{\rho}{6}$	[B] $\frac{\rho}{3}$	[C] $-\frac{p}{3}$
	[D] $\frac{2\rho}{3}$	[E] None of these	
32) Evaluate: $\sin\left(\arctan\frac{3}{8}\right)$	[A] $\frac{8}{3}$	[B] $\frac{\sqrt{73}}{8}$	[C] $\frac{3\sqrt{55}}{55}$
	[D] $\frac{3\sqrt{73}}{73}$	[E] None of these	
33) Add and simplify: $\frac{1}{1 + \cos x} + \frac{1}{1 - \cos x}$	[A] $\frac{2}{1-\cos x}$	[B] 0	$[C] 2 \cot x \csc x$
	[D] $2\csc^2 x$	[E] None of these	
34) Simplify. $\sec^4 x + \sec^2 x - 2$	[A] $2\tan^2 x$	[B] $(\sec^2 x + 2)(\tan^2 x)$	x)
	[C] $2\tan^4 x$	[D] $\tan^2 x + 2$	[E] None of these
35) Simplify: $\frac{\sin x - \sin^3 x}{\cos^4 x + \cos^2 r \sin^2 x}$	[A] sin <i>x</i>	[B] cos <i>x</i>	$[C] \sin^2 x$
	[D] $\tan x \sin x$	[E] None of these	
	2)	_	

36) Find all solutions for $\cos^2 x - (\cos^2 x - \sin^2 x) = 0$ on the interval [0, 2p).

[A] 0, p [B] $0, \frac{p}{2}, \frac{3p}{2}$ [C] 1, -1 [D] $\frac{p}{6}, \frac{5p}{6}, \frac{7p}{6}, \frac{11p}{6}$ [E] None of these

37) Find all solutions for $\cos^2 x - 5\sin x + 5 = 0$ on the interval [0, 2p).

[A] $\frac{\rho}{6}, \frac{3\rho}{2}$ [B] $0, \frac{\rho}{3}, \frac{2\rho}{3}$ [C] $\frac{3\rho}{4}, \frac{7\rho}{4}$ [D] $\frac{\rho}{2}$ [E] None of these

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38) Find all solutions for $\tan x - \cot x = 0$ on the interval [0, p].

[A] $\frac{p}{4}, \frac{3p}{4}$ [B] $\frac{p}{6}, \frac{5p}{6}$ [C] $\frac{p}{3}, \frac{2p}{3}$ [D] $0, \frac{p}{2}, p$ [E] None of these 39) Simplify: $\sin\frac{x}{6}\frac{3p}{2} + x_{\frac{x}{6}}^{\ddot{0}}$ [A] $-\sin x$ [B] $-\cos x$ [C] $\sin\frac{3p}{2} + \sin x$ [D] $-\cos x - \sin x$ [E] None of these 40) Given $\sin u = -\frac{5}{13}, p < u < \frac{3p}{2}$ and $\csc v = \frac{\sqrt{10}}{3}, \frac{p}{2} < v < p$, use a sum/difference formula to find $\sin(u + v)$. [A] $-\frac{3\sqrt{10}}{130}$ [B] $-\frac{27\sqrt{10}}{130}$ [C] $\frac{27\sqrt{10}}{130}$ [D] $\frac{-120 + 13\sqrt{10}}{130}$ [E] None of these 41) Two ships leave a port at 9 AM. One travels at a bearing of N43°W at 10 miles per hour, and the other travels at a

41) Two ships leave a port at 9 AM. One travels at a bearing of N43°W at 10 miles per hour, and the other travels at a bearing of S67°W at 16 miles per hour. Approximately how far apart are they at noon? Round to the nearest mile.

[A] 22 miles [B] 47 miles [C] 7 miles [D] 15 miles [E]	INONE OF THESE
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