Math 14 **Review for final**

			Answers
1	A) $\|-3x+2\|<7$ B) $\|5x+1\|>7$ C) $\|3x+1\|=-10$	D) $2x+1<7 \quad or \quad x+1>10$ E) $\|2x+3\|+10x=0$ F) $\|3x+2\|-x=0$	A) -5/3<x<3 B) x>6/5 or x<-8/5 C)no sol D) x<3 or x>9 E)x=-1/4 F)no sol
2	Solve: A) $x(2x-5)=3$ B) $x^3+2x^2-9x-18=0$		A)-1/2, 3 B)3, -3, -2
3	$\frac{3+2i}{1+i}=$		(5-i)/2
4	A) $\sqrt{3x-2}-2=5$ B) $\sqrt{x+1}+x=1$		A)17 B)0
5	Find the center and radius of circle: $x^2+y^2+10x-6y-2=0$		C(-5,3); r=6
6	Find the slope of the line perpendicular to $2y-x=3$.		-2
7	Find the slope of the line parallel to line $y+2y=5$.		-2
8	For $f(x)=2-x^2, \ and \ g(x)=x+3$ find $fog(x)$.		$-x^2-6x-7$
9	A) For $f(x)=\frac{5}{x+3}$ find $f^{-1}(x)$. B) For $f(x)=5x+3$ find $f^{-1}(x)$.		A)$\frac{5-3x}{x}$ B) $\frac{x-3}{5}$
10	Suppose $f(x)$ is a quadratic function with vertex $(3,-5)$ and $f(2)=-1$. Find $f(x)$.		$4(x-3)^2-5$
11	Find the end-behavior of $f(x)=\frac{-2x^5-3x+1000}{x^2-200x+500}$.		$x\to\infty, y\to-\infty$; $x\to-\infty, y\to\infty$;
12	Divide x^6-x^4+2x-3 by $x+3$; remainder?		639
13	Find the domain of A) $f(x)=\frac{x-5}{x^4-4x^2}$	B) $f(x)=\sqrt{3-2x}$ C) $f(x)=\frac{3}{\sqrt{x-5}}$	A) $x\neq 0,2,-2$ B) x<3/2 C) x>5
14	For $f(x)=x(x-2)^2(x+7)$ A) Find $x-intercepts \ (with \ multip$ Find y-intercept. B) end-behavior	C) $pos?$ D) graph	A)0,2(mult2),-7 B) $\to\infty$ on both sides C) 0<x<2 or x>2 or x<-7
15	For $f(x)=\frac{x+2}{(x+5)(x-1)}$ find A) vertical asymptotes		A) x=-5, x=1 B) y=0

	B) horizontal asymptote		
16	Sketch the graph of $y = \frac{2x-6}{x^2}$		
17	Solve: A) $x^2 \leq 2x$ B) $\frac{2x+2}{x+4} \leq 1$		A)answer: [0,2] B) answer: (-4,2]
18	Solve: A) $\log_2 x^3 = 6$	B) $\log_2 4x + \log_2 x = 3$	A) 4 B) 2
19	Expand: $ln\frac{a^3e^5}{b^2}$		3lna+5-2lnb
20	$32^t = 16^{t-2}$		-8
21	Solve for x: $3 \cdot 4^{x+1} = 7^x$		$\frac{ln3 + ln3}{ln7 - ln4}$
22	Find symmetries: $y^4x + y^2x = x^5$		
23	Suppose f is a one=to-one function (this means that f has an inverse), such that $f^{-1}(3) = 7$. Find $f(7)$. Find $f(f^{-1}(5))$.		$3, 5$
24	Find the equation of a function whose graph may be obtained from that of x^3 by shifting left 2 and reflecting across the y-axis.		$y = (-x + 2)^3$
25	A) A polynomial of degree 10 has at most _____ turning points. B) At most how many x-intercepts can the graph of $y = 23x^7 - 15x^3 + 3x - 2$ have?		A) 9 B) 7
26	Does the equation give y as a function of x? A) $5 - y^2 = 7x$ B) $7 - y^3 + 2x = 0$		A) no B) yes
27	A)Suppose $1000 invested for 10 years, compounded continuously, grows to $1500. Find the interest rate. B) How many years does it take for $1000 invested at 5% compounded continuously to grow to $1500?		A) $\frac{(\ln\frac{3}{2})}{10}$ B) $\frac{\ln\frac{3}{2}}{.05}$
28	Sketch the graph of $y = 2^{x-1} + 3$		
29	Find the vertices and foci: $4x^2 + 9y^2 = 36$		
30	$\log_2(x + 2) + \log_2(x - 1) = 2$		
Ex:	$\log_2(x + 2) - \log_2(x - 1) = 2$		x=2
40	$f(x) = -3x + 3;\ g(x) = x^2 + 1$ A) $(f \circ g)(-2)$ B) $(f - g)(3)$		A) -12
41	Find the domain of: $f(x) = \frac{\sqrt{4-2x}}{x}$		x<2 and x not equal to 0
42	For $f(x) = \frac{2x+1}{x-3}$; find $f^{-1}(x)$.		$y = \frac{1 + 3x}{x - 2}$