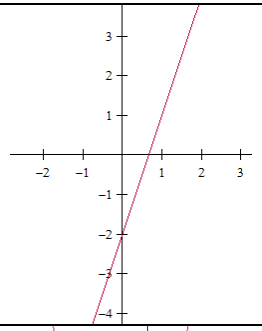
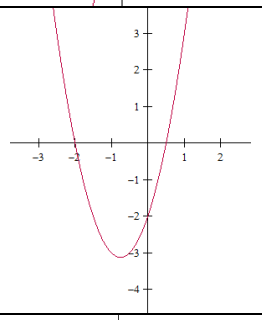
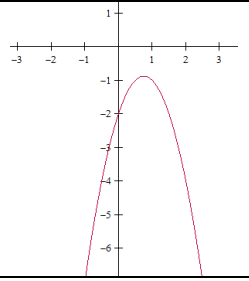
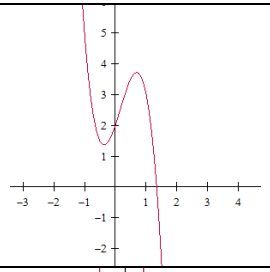
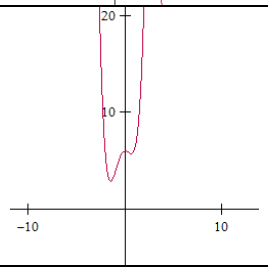
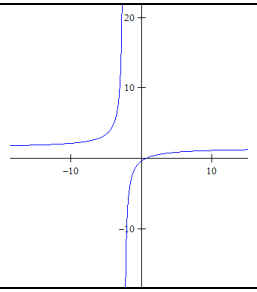
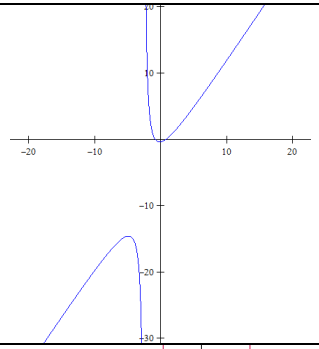
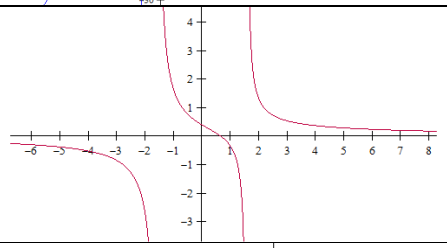
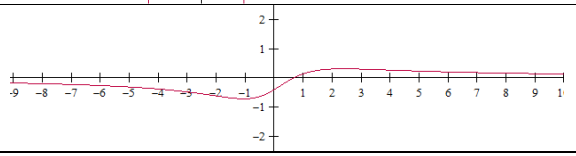
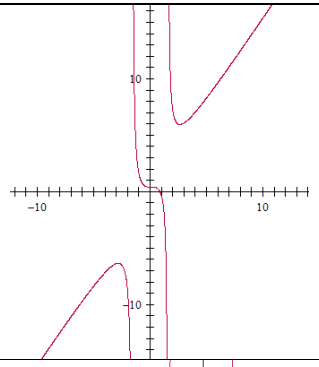
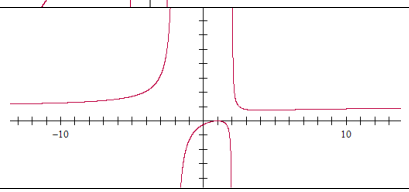
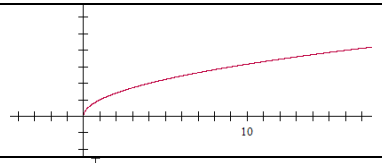
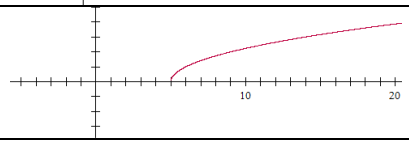
Polinomic functions Domain $\Rightarrow R$	$f(x) = ax + b$	$f(x) = 3x - 2$	
	$f(x) = ax^2 + bx + c$	$f(x) = 2x^2 + 3x - 2$	
		$f(x) = -2x^2 + 3x - 2$	

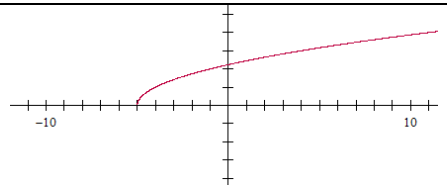
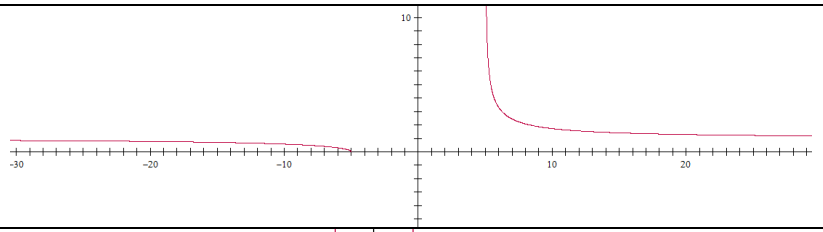
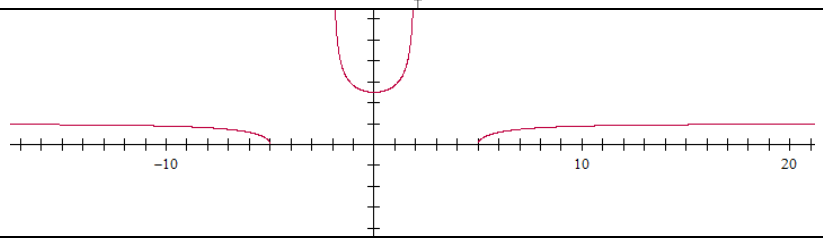
	$f(x) = ax^3 + bx^2 + cx + d$	$f(x) = -4x^3 + 2x^2 + 3x + 2$	
	$f(x) = ax^4 + bx^3 + cx^2 + dx + e$	$f(x) = x^4 + x^3 - 2x^2 + \frac{1}{5}x + 6$	
	...		

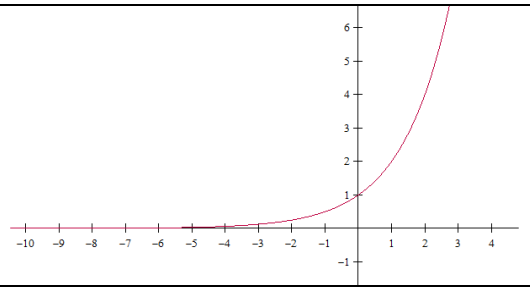
Rational Functions (with polynomic functions as numerator and denominator) Domain $\Rightarrow R$ Except the values of x that make the denominator 0	$f(x) = \frac{P(x)}{Q(x)}$ Where, P(x) and Q(x) are polynomic functions.	$f(x) = \frac{3x - 2}{2x + 5}$ Domain: R - $\{\frac{-5}{2}\}$	

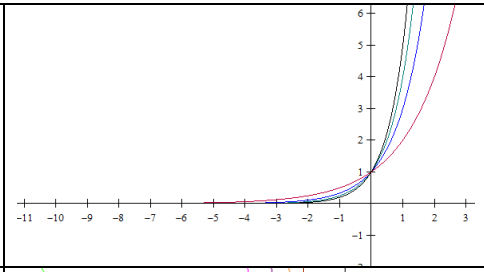
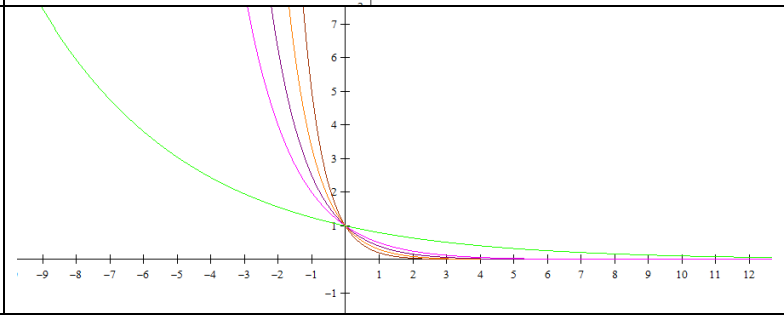
		$f(x) = \frac{3x^2 - 2}{2x + 5}$ Domain: R - $\{\frac{-5}{2}\}$	
		$f(x) = \frac{3x - 2}{2x^2 - 5}$ Domain: R - $\{\pm\sqrt{\frac{5}{2}}\}$	
		$f(x) = \frac{3x - 2}{2x^2 + 5}$ (Domain: R). Denominator never is 0	

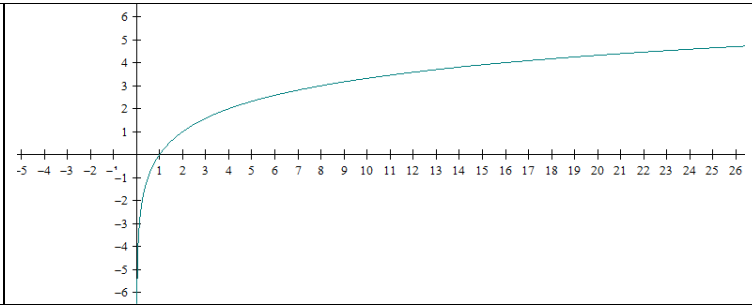
		$(x) = \frac{3x^3 - 2}{2x^2 - 5}$ Domain: R - $\{\pm\sqrt{\frac{5}{2}}\}$	
		$f(x) = \frac{x^2 - 2x + 1}{x^2 - 4}$ Domain: R - $\{\pm 2\}$	
	…		

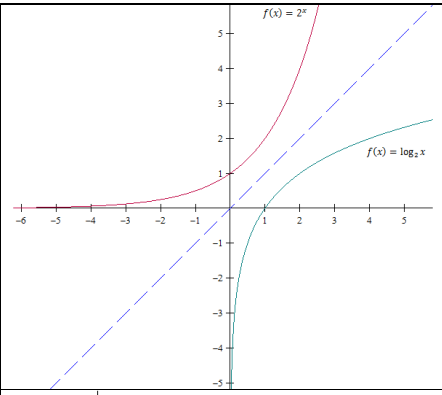
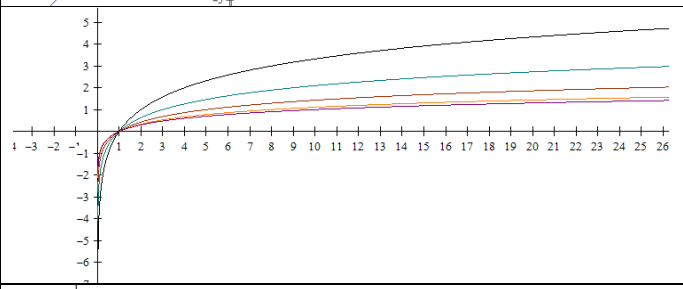
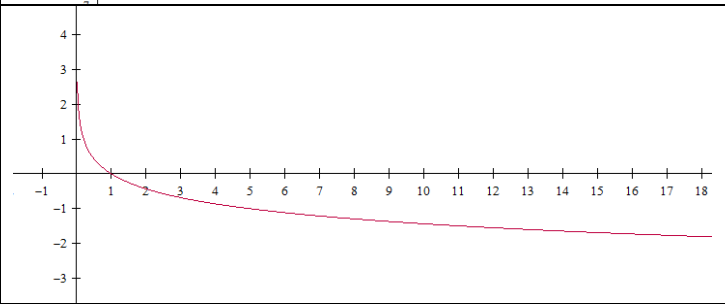
Radical functions Domain ⇒ $all\ R$ that make h(x)≥0	$f(x) = \sqrt{h(x)}$	$f(x) = \sqrt{x}$ Domain: R^+	
	Solve h(x)≥0	$f(x) = \sqrt{x - 5}$ Domain: (5,∞)	

		$f(x) = \sqrt{x+5}$ Domain: (-5,∞)	
		$f(x) = \sqrt{\frac{x+5}{x-5}}$ Domain: R – [-5,5)	
		$f(x) = \sqrt{\frac{x^2-25}{x^2-4}}$ Domain: (-∞,-5]U(-2,2)U[5,∞)	
	…		

Exponential functions Domain ⇒ R	$f(x) = a^x$ a = positive	$f(x) = 2^x$	

	a>1	$f(x) = 2^x$ $f(x) = 3^x$ $f(x) = 4^x$ $f(x) = 5^x$	
	a<1	$f(x) = 0.2^x$ $f(x) = 0.3^x$ $f(x) = 0.4^x$ $f(x) = \left(\frac{1}{2}\right)^x$ $f(x) = \left(\frac{4}{5}\right)^x$	

Logarithmic Functions (inverse of exponential functions) En español se dice funciones inversas o recíprocas. NO	$f(x) = a^x$ a = positive $f^{-1}(x) = \log_a x$	$f(x) = \log_2 x$	

CONFUNDIR FUNCIÓN INVERSA CON LA INVERSA DE UNA FUNCIÓN. Domain ⇒ R^+	a>1	$f(x) = 2^x$ and $f(x) = \log_2 x$ are inverse functions. they are reflections of each other in the line y=x	
		$f(x) = \log_2 x$ $f(x) = \log_3 x$ $f(x) = \log_4 x$ $f(x) = \log_5 x$ $f(x) = \log_6 x$	
	a<1	$f(x) = \log_{0.2} x$	

Exercises:

Find the domain of the following functions:

a) $f(x) = 2x^2 + x - 3$
b) $f(x) = 6x^2 - 2x$
c) $f(x) = 3x^2 - 1$
d) $f(x) = \frac{2x^2-1}{5x^2+3}$
e) $f(x) = \sqrt{\frac{6x^2+1}{5x-3}}$