Name:_____ Date: _____

Identify the following characteristics given the graph:

1. Domain: $\mathbb{R}$

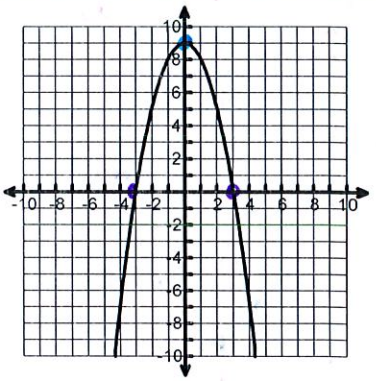
   Range: $(-\infty, 9]$

   (2) Zeros: $-3, 3$

   Y-intercept: $(0, 9)$

* Quadratic *

x^2



2. Domain: $\mathbb{R}$

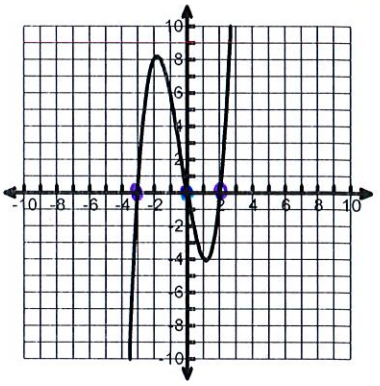
   Range: $\mathbb{R}$

   (3) Zeros: $-3, 0, 2$

   Y-intercept: $(0, 0)$

* Cubic *

x^3



3. Domain: $\mathbb{R}$

   Range: $[-20, \infty)$

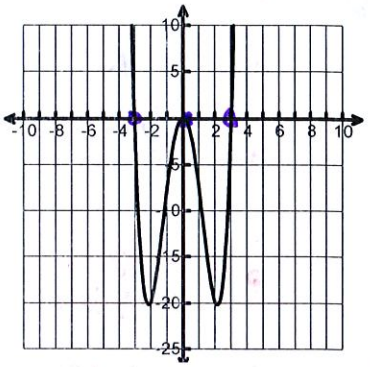
   (4) Zeros: $-3, 0, 0, 3$

   Y-intercept: $(0, 0)$

* Quartic *

x^4

Bounce @ 0!



4. Domain: $\mathbb{R}$

   Range: $\mathbb{R}$

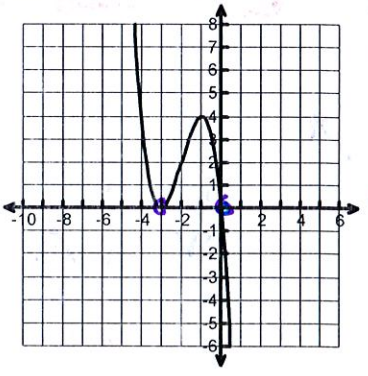
   (3) Zeros: $-3, -3, 0$

   Y-intercept: $(0, 0)$

* Cubic *

x^3

Bounce @ -3!



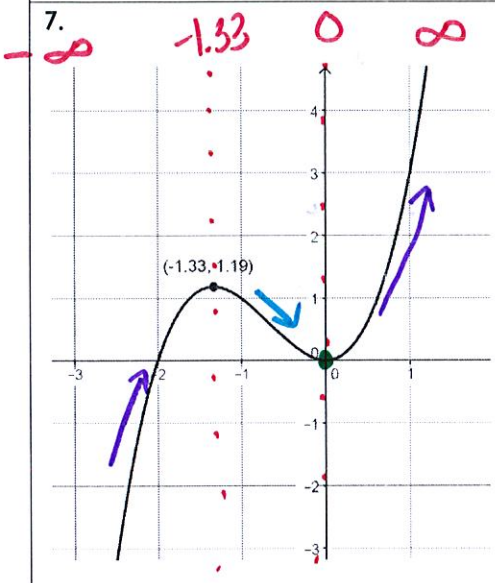
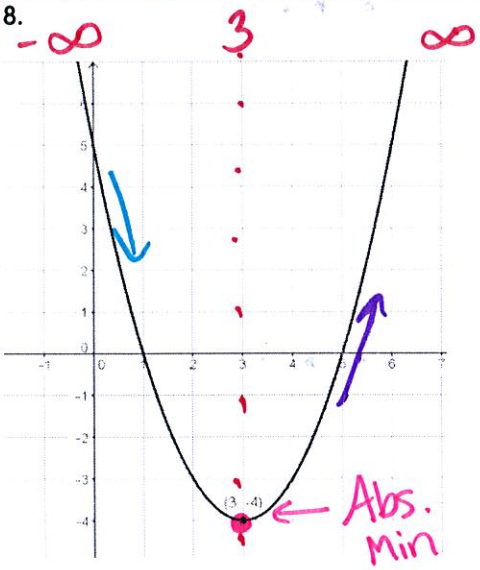
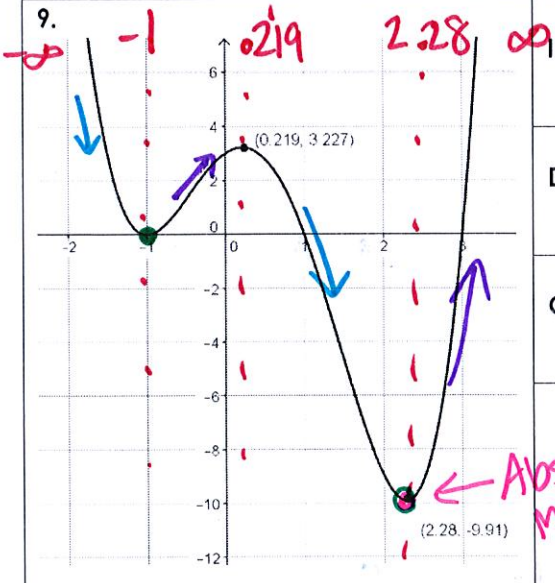
Determine the number of zeros, y-intercept, & find the domain:

5. $f(x) = -4x^3 + x + 9$

   3 , $(0, 9)$, $\mathbb{R}$

6. $f(x) = -6x^4 + 1$

   4 , $(0, 1)$, $\mathbb{R}$

	Increasing, Decreasing, & Constant (X-values → only ( ))		Extremas	
7. 	Increasing	(-∞, -1.33) (0, ∞)	Absolute Minimum	None → goes to -∞ very lowest point
	Decreasing	(-1.33, 0)	Absolute Maximum	None → goes to ∞ very highest point
	Constant	—	Relative Minimum(s)	(0,0) Any low point
			Relative Maximum(s)	(-1.33, 1.19) Any high point
8. 	Increasing	(3, ∞)	Absolute Minimum	(3, -4)
	Decreasing	(-∞, 3)	Absolute Maximum	none
	Constant	—	Relative Minimum(s)	(3, -4) * include Absolute Min*
			Relative Maximum(s)	none
9. 	Increasing	(-1, .219) (2.28, ∞)	Absolute Minimum	(2.28, -9.91)
	Decreasing	(-∞, -1) (.219, 2.28)	Absolute Maximum	none
	Constant	—	Relative Minimum(s)	(-1, 0) + (2.28, -9.91)
			Relative Maximum(s)	(.219, 3.227)