

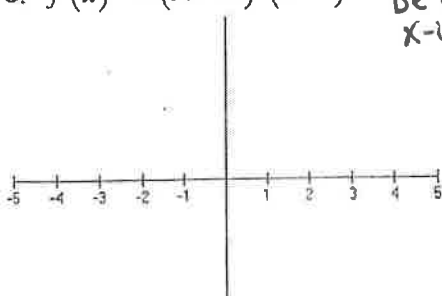
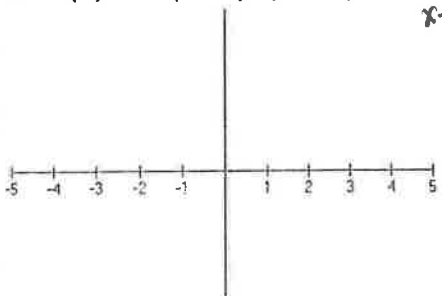
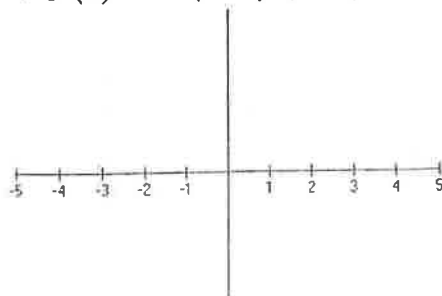
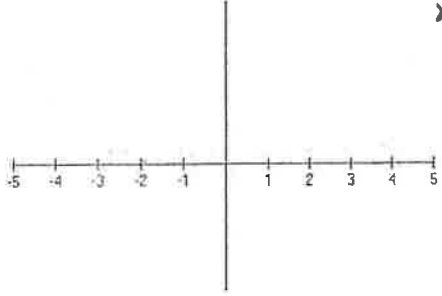
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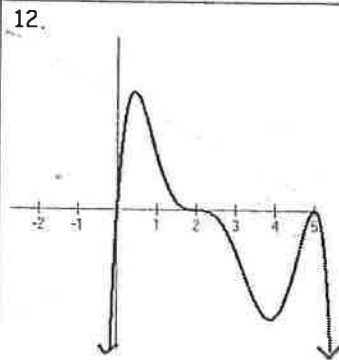
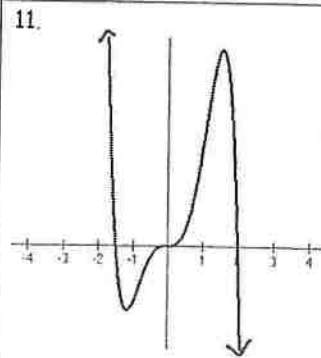
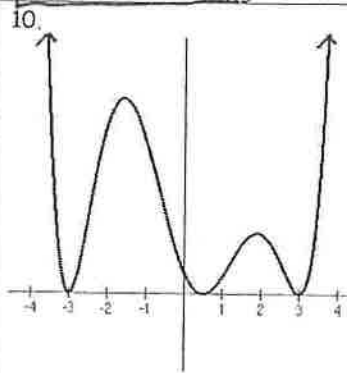
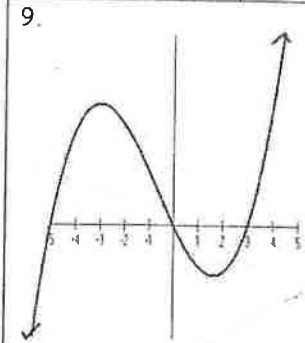
I. Use a graphing utility to graph the function. Then find the requested information.

<p>1. <math>f(x) = x^4 + x^3 - 3x^2 - 5x - 2</math></p> <p># Relative Extrema: _____</p> <p>Real Zeroes (and their multiplicity): _____</p> <p>Factored Form of Function: _____</p>	<p><del>2. <math>f(x) = -2x^5 + x^4 + 20x^3 + 29x^2 + 12x</math></del></p> <p># Relative Extrema: _____</p> <p>Real Zeroes (and their multiplicity): _____</p> <p>Factored Form of Function: _____</p>
<p><del>3. <math>f(x) = x^5 + 4x^4 - 18x^3 - 108x^2 - 135x</math></del></p> <p># Relative Extrema: _____</p> <p>Real Zeroes (and their multiplicity): _____</p> <p>Factored Form of Function: _____</p>	<p>4. <math>f(x) = -2x^4 + 7x^3 + 5x^2 - 19x - 15</math></p> <p># Relative Extrema: _____</p> <p>Real Zeroes (and their multiplicity): _____</p> <p>Factored Form of Function: _____</p>

II. Sketch a graph of the function **WITHOUT** using the calculator.

<p>5. <math>f(x) = -(2x+7)^3(x-1)</math> <i>Be careful w/ x-int. for 2x+7</i></p> 	<p>6. <math>f(x) = x^3(x+4)^2(2x-5)</math> <i>Be careful w/ x-int. of 2x-5</i></p> 
<p>7. <math>f(x) = -x^2(x-5)^2(x+3)</math></p> 	<p>8. <math>f(x) = (2x+1)^3(x-2)(x-5)</math> <i>Be careful w/ x-int. of 2x+1</i></p> 

III. Determine a possible equation for the polynomial (in factored form) given the graph.



IV. Miscellaneous Problems.

13. Find all the zeros for...  
 $f(x) = -2x(x+3)^3(x-8)$

~~14.~~ Find all the zeros for...  
 $f(x) = x^3 - 37x^2 + 36x$  by factoring.

15. Write a possible equation for a polynomial with a degree of 6 and having 5 as a triple root, -2 as a double root, and 3 as a single root (in factored form).  
 triple root means multiplicity 3  
 double root " " 2

16. Write a possible equation for a polynomial with a negative leading coefficient and an even degree (in factored form).