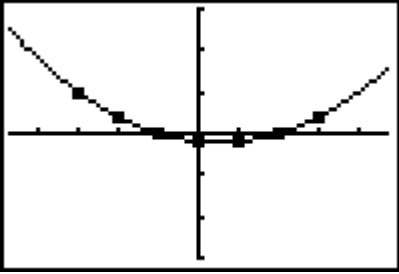
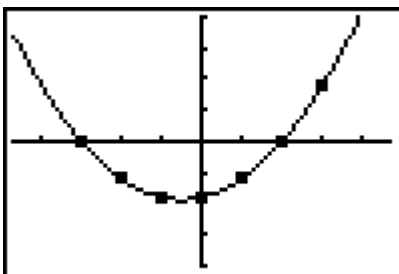
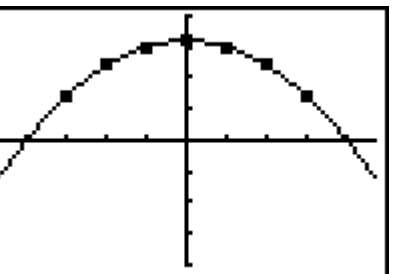
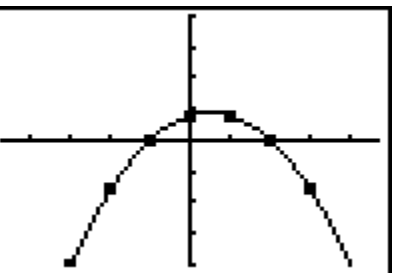
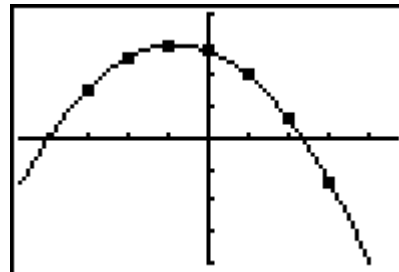


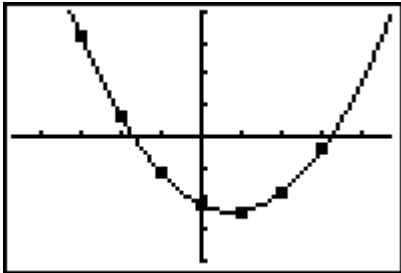
Date:

Factor each trinomial by first extracting the common factor (even if it is a fraction). Then factor the resulting trinomial and perform any other factoring which is necessary to put the final answer into the form $y = a(x + s)(x + t)$.

<p>1. Equation: $y = \frac{1}{2}x^2 - \frac{1}{2}x - 1$</p>		<table border="1"> <thead> <tr> <th>x</th> <th>y</th> <th>1^{st} diff's</th> <th>2^{nd} diff's</th> </tr> </thead> <tbody> <tr><td>-3</td><td>5</td><td>-3</td><td>1</td></tr> <tr><td>-2</td><td>2</td><td>-2</td><td>1</td></tr> <tr><td>-1</td><td>0</td><td>-1</td><td>1</td></tr> <tr><td>0</td><td>-1</td><td>0</td><td>1</td></tr> <tr><td>1</td><td>-1</td><td>1</td><td>1</td></tr> <tr><td>2</td><td>0</td><td>2</td><td></td></tr> <tr><td>3</td><td>2</td><td></td><td></td></tr> </tbody> </table>	x	y	1^{st} diff's	2^{nd} diff's	-3	5	-3	1	-2	2	-2	1	-1	0	-1	1	0	-1	0	1	1	-1	1	1	2	0	2		3	2			<table border="1"> <thead> <tr> <th>x</th> <th>y</th> <th>1^{st} diff's</th> <th>2^{nd} diff's</th> </tr> </thead> <tbody> <tr><td>-3</td><td>5</td><td>-3</td><td>1</td></tr> <tr><td>-2</td><td>2</td><td>-2</td><td>1</td></tr> <tr><td>-1</td><td>0</td><td>-1</td><td>1</td></tr> <tr><td>0</td><td>-1</td><td>0</td><td>1</td></tr> <tr><td>1</td><td>-1</td><td>1</td><td>1</td></tr> <tr><td>2</td><td>0</td><td>2</td><td></td></tr> <tr><td>3</td><td>2</td><td></td><td></td></tr> </tbody> </table>	x	y	1^{st} diff's	2^{nd} diff's	-3	5	-3	1	-2	2	-2	1	-1	0	-1	1	0	-1	0	1	1	-1	1	1	2	0	2		3	2		
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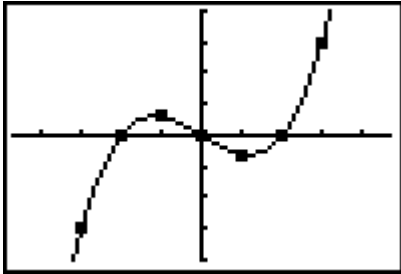
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6. Equation:
 $y = 2x^2 - 3x - 11$



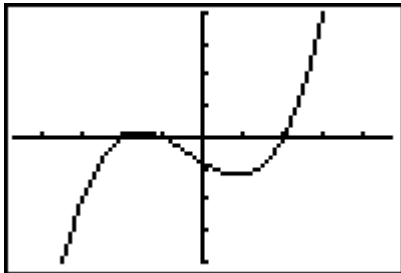
x	y	1^{st} diff's	2^{nd} diff's
-3	16	-13	4
-2	3	-9	4
-1	-6	-5	4
0	-11	-1	4
1	-12	3	4
2	-9	7	
3	-2		

7. Equation:
 $y = x^3 - 4x$



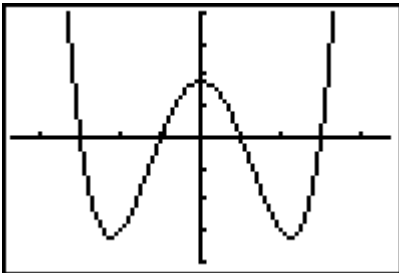
x	y	1^{st} diff's	2^{nd} diff's	3^{rd} diff's
-3	-15	15	-12	6
-2	0	3	-6	6
-1	3	-3	0	6
0	0	-3	6	6
1	-3	3	12	
2	0	15		
3	15			

8. Equation:
 $y = x^3 + x^2 - 4x - 4$



x	y	1^{st} diff's	2^{nd} diff's	3^{rd} diff's
-3	-10	10	-10	6
-2	0	0	-4	6
-1	0	-4	2	6
0	-4	-2	8	6
1	-6	6	14	
2	0	20		
3	20			

9. Equation:
 $y = x^4 - 10x^2 + 9$



x	y	1^{st} diff's	2^{nd} diff's	3^{rd} diff's	4^{th} diff's
-4	105	-105	90	-60	24
-3	0	-15	30	-36	24
-2	-15	15	-6	-12	24
-1	0	9	-18	12	24
0	9	-9	-6	36	24
1	0	-15	30	60	
2	-15	15	90		
3	0	105			
4	105				