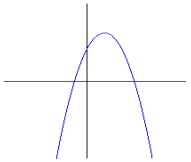
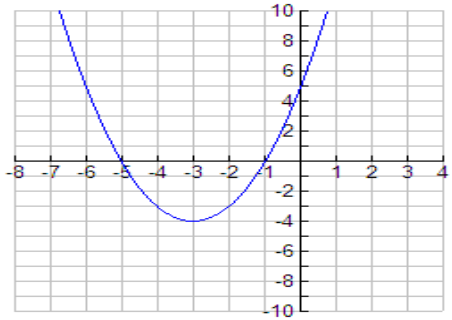
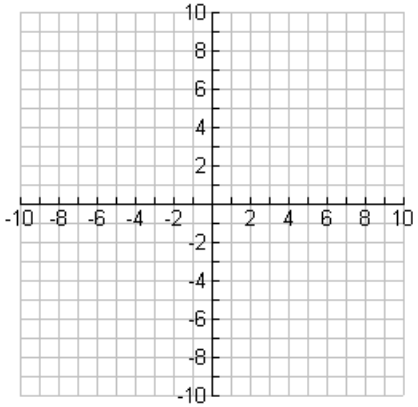
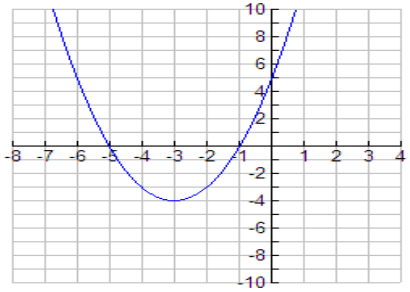
TARGET 5A: UNDERSTANDING GRAPHS OF QUADRATIC FUNCTIONS

<table>
<tr><th>I can …</th><th>Sample Question</th><th>Evidence of Understanding</th><th>What level is your understanding?
4 = complete
3 = substantial
2 = developing
1 = minimal</th></tr>
<tr><td>1. determine which quadratic rule best fits a table or graph.</td><td>Match the table/graph to the correct equation .
 
a) $g(x)=-x^2+x-5$
b) $f(x)=-x^2+x+5$
c) $p(x)=x^2+x+3$
d) $t(x)=x^2+x-4$

<table><tr><th>x</th><th>y</th></tr><tr><td>-7</td><td>5</td></tr><tr><td>-6</td><td>0</td></tr><tr><td>-5</td><td>-3</td></tr><tr><td>-4</td><td>-4</td></tr><tr><td>-3</td><td>-3</td></tr><tr><td>-2</td><td>0</td></tr><tr><td>1</td><td>5</td></tr><tr><td>0</td><td>12</td></tr><tr><td>1</td><td>21</td></tr></table>
a) $p(x)=-x^2+8x+12$
b) $g(x)=-x^2+4x-12$
c) $t(x)=x^2+x-12$
d) $f(x)=x^2+8x+12$</td><td></td><td></td></tr>
<tr><td>2. use a graph to find the x and y intercepts, line of symmetry, and vertex.</td><td> 
From the graph determine the following:
• x-intercepts
• y-intercept
• line of symmetry
• vertex</td><td></td><td></td></tr>
</table>

I can …	Sample Question	Evidence of Understanding	What level is your understanding? 4 = complete 3 = substantial 2 = developing 1 = minimal
3. use standard form to find the *y* intercept, line of symmetry, vertex, and sketch a detailed graph by hand.	Given $g(x)=-x^2+8x+16$ find the following: • y-intercept • x-intercepts • Line of symmetry • Vertex		
4. use factored form to find *x* and *y* intercepts, line of symmetry, vertex, and sketch a detailed graph by hand.	Given $h(x)=(x-2)(x+6)$ find the following: • y-intercept • x-intercepts • Line of symmetry • Vertex Sketch a graph of *h(x)* by hand.		
5. use a graph to determine the domain and range of a quadratic function.	What is the domain of the function shown in the graph? Range? 		
6. describe the effects that changing parameters have on the graph of a quadratic function.	Compare and contrast the graphs of $f(x)=x^2+12$ and $g(x)=-x^2+5$.		

TARGET 5B: UNDERSTANDING QUADRATIC EXPRESSIONS

I can …	Sample Question	Evidence of Understanding	What level is your understanding? 4 = complete 3 = substantial 2 = developing 1 = minimal
1. add/subtract quadratic expressions.	Simplify: • $4x^2+2x-5+6x-3x^2$ • $\left(2b^2+5b-7\right)-\left(3b^2-8b+9\right)$		
2. expand a product of binomials.	Simplify: • $(w+2)(w-3)$ • $(3x-5)(2x+3)$		
3. factor simple quadratics (leading coefficient of 1).	Factor: • $x^2-2x-15$ • $a^2+12a+36$		
4. factor complex quadratics (leading coefficient other than 1).	Factor: • $3x^2+5x-2$ • $6k^2-11k-10$		
5. factor differences of squares.	Factor: • x^2-16 • $25w^2-81$		

TARGET 5C: UNDERSTANDING SOLUTIONS TO QUADRATIC PROBLEMS

I can …	Sample Question	Evidence of Understanding	What level is your understanding? 4 = complete 3 = substantial 2 = developing 1 = minimal
1. solve quadratic equations using tables and graphs.	Solve $3 = -5t^2 + 2t + 10$ with a table or graph.		
2. solve quadratic equations by factoring.	Solve by factoring: • $x^2 + 11x = 0$ • $x^2 - 5x + 6 = 0$ • $2x^2 + 7x = -6$		
3. solve quadratic equations by using the quadratic formula.	Use the quadratic formula to solve: • $x^2 - 6x - 7 = 0$ • $2x^2 + x = 5$		
4. solve problems that can be represented by quadratic functions.	The profit that Pam's Pizza can make every night depends on how much Pam charges per pizza (she only sells large pizzas). The function $P(c) = 40c - 2c^2$ models the profit, *P*, in dollars where *c* is the cost of a large pizza in dollars. How much was the cost of a large pizza if Pam had \$150 profit last night?		