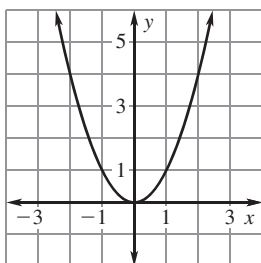
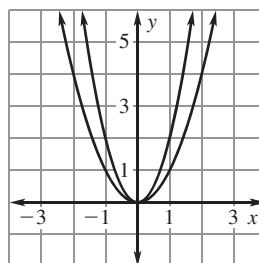
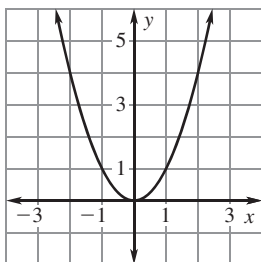
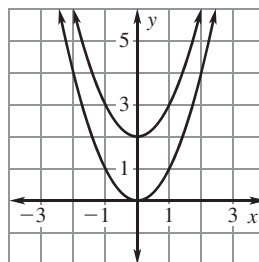


LESSON
9.1
Investigating Algebra Activity:
Graphing $y = ax^2 + c$
For use before the lesson "Graph $y = ax^2 + c$ "
Materials: graph paper or graphing calculator

QUESTION How do the coefficients of a and c affect the shape of the graph of the quadratic function $y = ax^2 + c$?

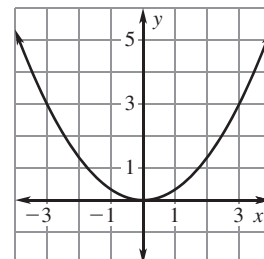
EXPLORE 1 Graph $y = ax^2$
STEP 1 Graph $y = x^2$

STEP 2 Graph $y = 2x^2$

STEP 3 Graph $y = ax^2$ using -2 , -0.5 , and 0.5 as values of a . Compare each graph to the graph of $y = x^2$. Describe how the value of a affects the graph of $y = ax^2$.

EXPLORE 2 Graph $y = x^2 + c$
STEP 1 Graph $y = x^2$

STEP 2 Graph $y = x^2 + 2$

STEP 3 Graph $y = x^2 + c$ using -2 , 1 , and 3 as values of c . Compare each graph to the graph of $y = x^2$. Describe how the value of c affects the graph of $y = x^2 + c$.

DRAW CONCLUSIONS
Use your observations to complete these exercises.

- Which of the quadratic functions could be shown by the graph at the right? *Explain* your reasoning.

A. $y = x^2 - 3$	B. $y = x^2 + 3$
C. $y = 3x^2$	D. $y = \frac{1}{3}x^2$



- Use the values of a and c to sketch the graph of $y = -x^2 + 3$.